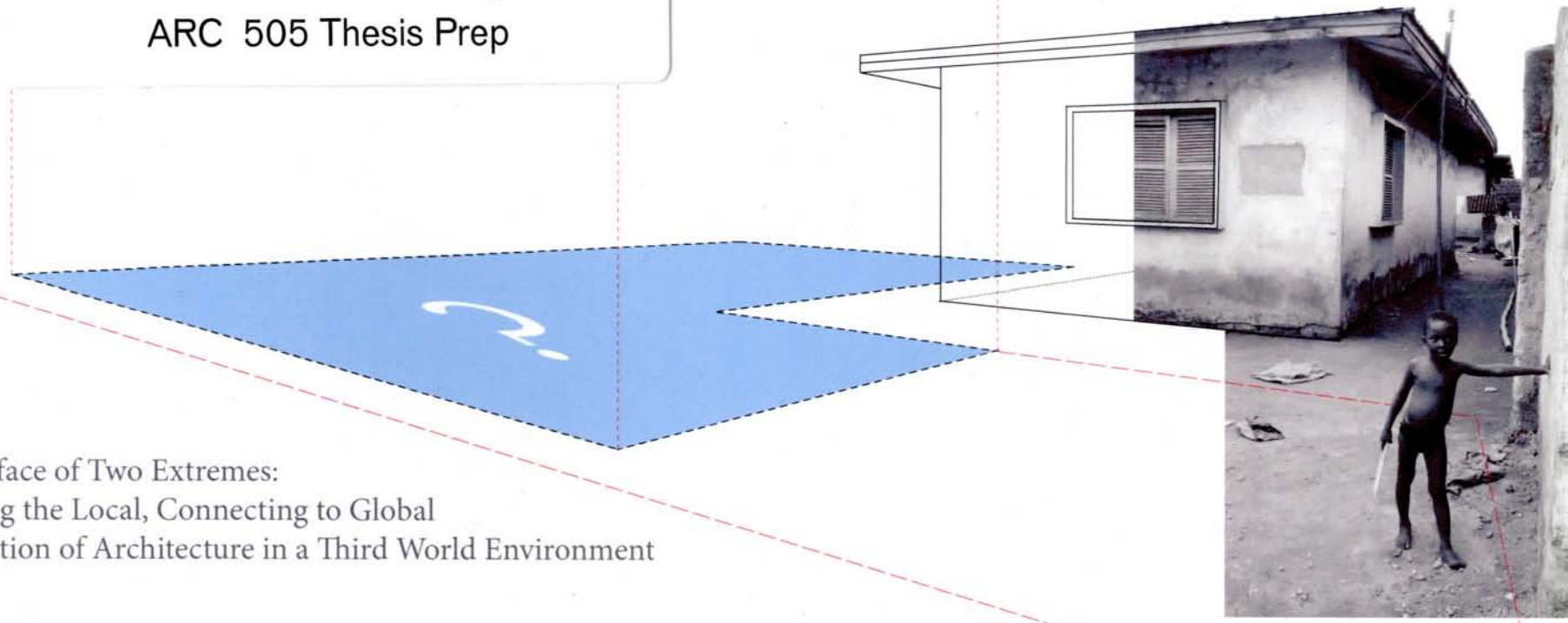
12-2006

The Interface of Two Extremes: Preserving the Local, Connecting to Global The Question of Architecture in a Third World Enironment

Ella Scheuer
SU School of Architecture



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Thesis Preparation
Randall Korman
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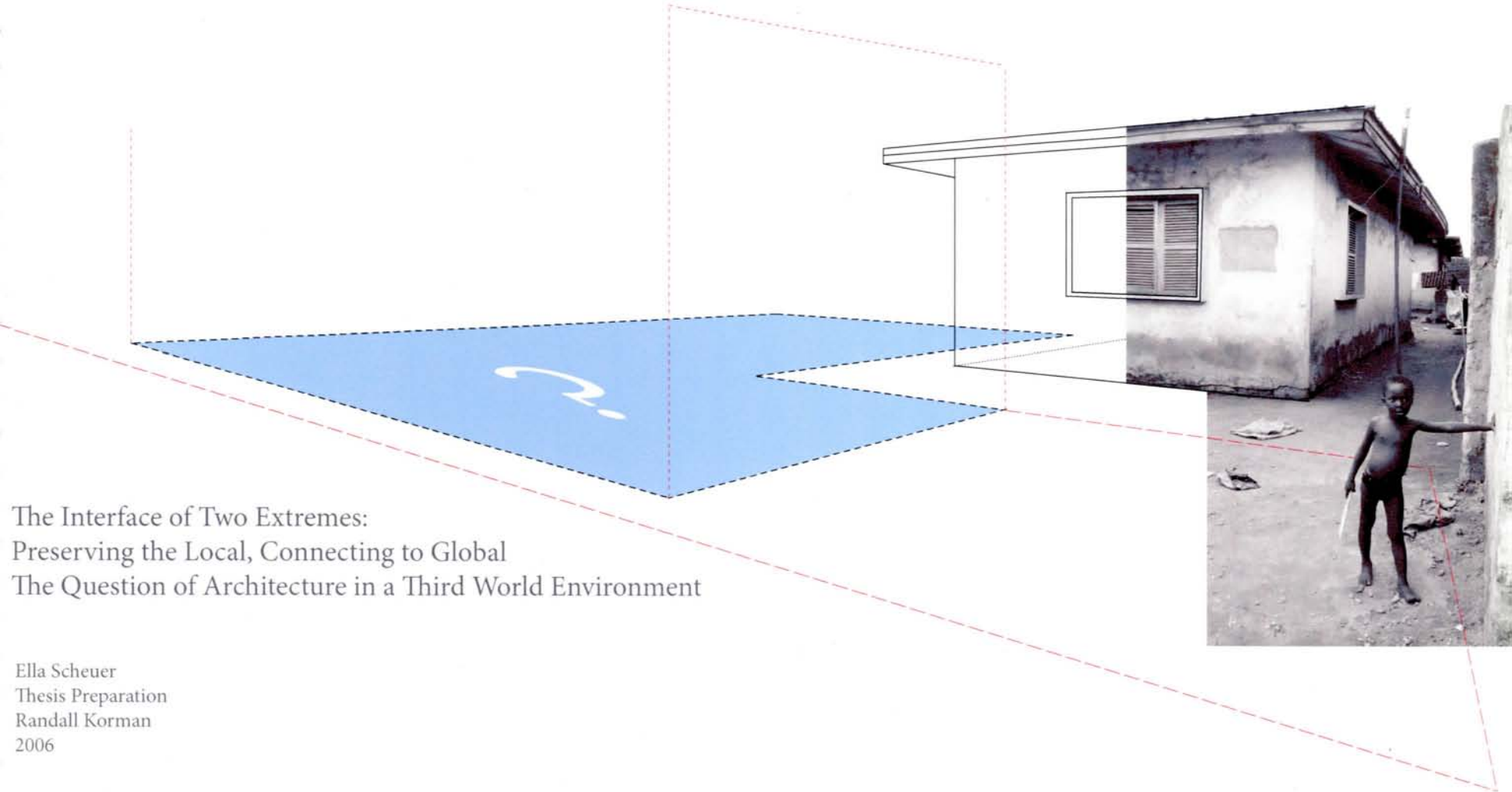

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"School is so isolated, and architects have this jargon-it becomes a game of speaking in clever ways to explain your design. It's really nice to get out in the community and see real-life issues and problems and how architecture and good design can play a part in addressing them-but just a part. When you participate in a project like this, you can appreciate that good design is important, good construction is important, but so is being sensitive and open. It's common sense. There's no magic thing you do. Students learn that they aren't heroes, that they're part of a continuum of hard-working activists."

Leslie Morishita
Housing and Community Planner
Inter*Im Community Development Association

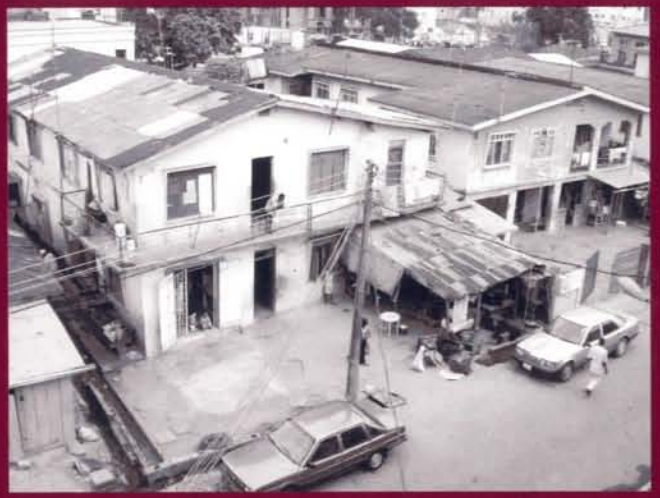
contents

"Modernism does not necessarily mean liveliness and change is not always for the better...Tradition is not necessarily old-fashioned and is not synonymous with stagnation... Tradition is the social analogy of personal habit, and in art has the same effect of releasing the artist from distracting and inessential decisions so that he can give his whole attention to the vital ones."

_Hassan Fathy

Architecture for the Poor; An Experiment in Rural Egypt

1973



"Experience, everyday life, is not seen as an adequate basis for the construction of knowledge. The existence and importance of structures, mechanisms and forces beyond immediate observation must be accepted."

_John Eyles

thesis proposal

The world in which we live is evolving at exponentially increasing speeds. New products, inventions, conveniences and technologies are shelved so rapidly, consumers can barely maintain the pace. Acquiring the latest tools, equipment and knowledge has become for many, a game of catch-up as the computer age has become dominant in everyday life.

These constant upgrades are considered to be arduous in the United States (where much of this technology was invented and/or developed) but it can be overwhelming for a Third World country who has only been introduced to the advances secondhand. The ways in which a Third World country must adapt to stay afloat in the waters of globalization are far more rapid and extreme than that of the United States or Europe. Indeed, it is a cultural battle in which only the strong survive. The societies less able to acclimate with the global norms are incrementally falling further and further behind the technologiclly advanced. As a result, these societies are faced with the threat of extinction.

This striving for global equality, uniformity and at times, excessive luxury, has led to ignorance and neglect of regional character and authenticity.

Understanding this, I found the need to create an architecture that embraces local heritage as well as global progress. This duality will be expressed through the language of the architecture by studying both equatorial African building techniques and contemporary building technologies of the West. It will be expressed through the urban gestures by engaging the traditional artisans of the UNESCO World Heritage site as well as the students of Benin City and the surrounding areas who have a current interest in global activities and business. It will also be expressed through program by including the study and experiment of global market economy using local crafts and indigenous goods.

By maintaining a focus on both local and global constituents, a world awareness can be fostered without losing sight of the sense of community.

Through this intended balance of the micro and macro, certain processes will emerge at multiple scales. These include the process of the craft forms being produced, not only through the study of the ancestry of the tradition but through the current production from raw materials to finished product. There is also the process of a student's education from adolescent villager to independent, well-informed erudite, along with the

independent, well-informed erudite, along with the possibility for the transformation of Benin City and Nigeria itself, from Third World country to developed nation. The idea is that all of these processes will become visible to the community through the architecture. Bronze-casting, an artform that had almost been completely abandoned will now be celebrated in a way that it has not been before; and the process of the fairtrade will be exposed to anyone who cares to wander onto the site. This exposure will happen through the construction of views and in this way, the architecture provides for display and production simultaneously; gallery and storage become one as the method of creating and learning are glorified. This process of making is emphasized through the calculated sequence of those that occupy the site, be that of the student or faculty or worker or pedestrian.

My project, positioned at the interface between the elite business class and the common layperson, has the rich potential to demonstrate to both sides what each is capable of. Insead of exisitng as separate elements of society, they will now be working together for a common acheivement through the school.

Through the past four years of architecture school at Syracuse University, Emily Turner and Ella Scheuer have held very similar beliefs about what architecture is and what it could be. It was during one of their many discussions that the idea of a collaborative thesis arouse. It was proposed to the school that the site selection and documentation, site research and analysis be shared between the two of them.

As a result of the shared site analysis, the application for both involved is the Nigeria Foundation for Media, Art and Technology. This will be a shared academic institution with the departments branching in two different directions.

The two separate academic variables are on a conjoined site in the urban center of Benin City, Nigeria. Ideally, these two projects will possess the ability to operate independently, yet each would be enhanced and perhaps be more successful when merged together. Two separate thesis preparation books and thesis projects will be generated for evaluation. However, the hope is to create is tom create a strong interplay and interdependence between the projects, therefore viewing them in their final stages as interrelated.

From an independent angle, the projects will differ in both their content and also in their urban and architectural strategies. One of the academic departments will house a center for radio broadcast and journalism while the other will focus primarily on global business and marketing technologies as well as the instruction of local crafts. The School of Radio Broadcast and Journalism is oriented on the west portion of the site, directly addressing King's Square (the city center) along with Sapelle Road. The School of Art and Technology is located on the on the eastern half of the site, running parallel to the UNESCO World Heritage site while also fronting Sapelle Road. Due to the contextual variations being addressed by each school, differences in scale and perhaps language and materials may be inevitable.

From an independent perspective, the projects will be viewed as one entity working together towards the greater good of the public domain. In their architectural intentions and construction, the foundation's aim is to promote freedom and flexibility in response to the extremely restricted and introverted fabric of the city center. Furthermore, the schools will work in conjunction with one another to create an unrestricted yet subtly oriented sequence from the city center to the confines of the UNESCO heritage site.

Webster's Dictionary defines 'Third World' as the undeveloped nations of the world, especially those with widespread poverty and as a group of nations that do not align themselves with the policies of either the United States or other world powers. Nigeria, a third world country, has an inadequate civil infrastructural system including little or no solutions to the problems of drainage, freshwater supply and removal, waste management or road maintenance. The money that is present in the country continually circulates among the top few business and government officials while the vast majority of the population rarely sees its effects. This is largely due to the corruption of the government leadership, who ignore the basic needs of the very people that elected them to office. In addition to this, there is currently a strong curiosity in the processes of technology, communications, networking and a global economy. Although this is certainly important and a natural result of progress, the technology feels premature. This fascination has left basic utilities by the wayside and the common villager out of the picture completely. In this way, a new fiscal crisis of the state arises. There is an increased contradiction between the internationalization of investment, production, consumption on the one hand, and the national basis of taxation systems on the other. Nigeria currently imports the vast majority of it consumer goods and agriculture, while essentially the sole export of the country is oil. Statistically, this makes Nigeria a very wealthy country. However, this money does not seem to funnel down to the rest of society where it is needed most.

Creating a solution for this seems a daunting and indeed overwhelming task. An appeal needs to be made to the kind of "situated meaning and emotional belonging that appear to have been eroded by the logic of globalization" (Crang, 30). An observation that was noted while there was that Nigeria has a very rich local identity. They take great pride in Benin Kingdom and also in identifying themselves as African. There is much more of an emphasis on these two rather than Nigeria, which was a European construction of completely different African cultures. The sense of place, of a community with shared experiences and a feeling of belonging should be emphasized.

There exists a great deal of local crafts and trades, one of those being bronze-casting, a trade that has been practiced in that region for hundreds of years. With the increased number of imports and a change of priorities, there are fewer and fewer craftsman who still practice the traditional methods of the art form. By creating a focus of local identity while allowing commerce to expand to foreign buyers, the programmatic insertion I propose ensures the continuation of the craft through time, keeps outside money circulating locally and increases a sense of community and shared identity.

By working against the forces of uniformity, the technology of the global can be used to focus on and enhance the local. While in Nigeria, I witnessed an "out with the old, in with the new" mentality. Cellular phones, stereos, computers, televisions and air conditioning were all in place, even though electricity wasn't connected the majority of the time. With such a quick transition to all things electronic, heritage can be forgotten. It is with this in mind that I explain the programmatic elements of my thesis.

My proposal for Benin City is to incorporate an academic institution into the fabric of the city center. The main educational departments will be a Department of Marketing and Information Technology, a Business Department, a Department of Distribution and Supply Technology and a Department of Heritage Cracfts. Currently in Benin City, there are merely two television stations, both government-run, no local newspapers and no local public radio stations. Advertising on the other hand, is all-encompassing, with billboards displaying the latest hand cream and posters showing the current political candidates, including their fictitious promises. But besides the occasional AIDS signs, there is no thought given to the use of media for awareness. Media and information technology, if used responsibly, can be a powerful tool for positive change. Nigeria, in these terms, is in a somewhat unique and ideal situation. She is a developing country, but not of the extreme poverty that plague other African countries. There is a basic technological foundation present, and from this a new consciousness can be built from the educational system to make an affirmative impact on the rest of society.

One way to do this is to allow the new technology and global connections to facilitate the local artisan. With this direct connection to the world economy, and with the academic setting to teach proper skills, an open trade with the rest of the world can be achieved. The concept of "fair trade" is not a new one, and so the suggestion of implementing a local fair trade market is not revolutionary. On the contrary, there are many organizations such as SERRV: A Greater Gift, Heifer Project International and 10,000 Villages that practice alternative trade and development, but none in Benin City. By starting a local fair trade organization run by the school which sells local heritage crafts globally, skills of marketing, economics, internet technology, computer technology and international communications can be acquired. This in turn will improve the local livelihood of the disadvantaged people making the crafts within the developing country and help to change the imbalanced structures of international trade.

This general idea of the program is not mine alone, but one that was inspired by the United Nations. At the Millennium Summit in September of 2000, the UN created the Millennium Development Goals which set a world agenda for progress. The most aplicable is number eight: "to develop further an open trading and financial system that is rule-based, predictable and non-discriminatory and that includes a commitment to good governance, development and poverty reduction-nationally and internationally".

Additionally, since little consideration is given in Nigeria to environmental concerns, I feel it is necessary to incorporate earth-friendly materials and green design strategies. The climate lends itself to open fresh airflow and the opportunity for an artistic manipulation of natural light (something that is rarely addressed there). Even rethinking the role and usage of water in terms of construction and as a permanent fixture on the site is a possibility. To help enforce a design based on locality and green action, I intend to limit myself to regional available materials with an emphasis on creativity of usage. This method could be defined as a kit of parts which must be found objects in the region of the Benin Kingdom. Designing a self-sustaining building for a self-sustaining culture is the ultimate goal.

The thesis site is envisioned to work as an assembly line.

Raw materials are delivered to the school through the rear entrance and are used by the students of Heritage Crafts to create the relics of Benin. These include the bronze figures, wood carvings, gold and metal pieces and trinkets of lesser value such as the red beaded necklaces and other jewelry. There is of course the opportunity for expansion to include woven baskets or cloth, which are also made locally in Benin, if the original items are successful. All of these trades are taught in the school studios by the artisans who work on Igun Street (the UNESCO street). The local artisans will still sell their own work in their market stalls but will also have to opportunity to take advantage of the expanded market created by the school to sell the crafts externally. This concept can be compared to the local restaurant and bakery 'Pastabilies' in Syracuse, New York. Pasta's bread is baked locally and available for purchase in the bakery, but it is also for sale in a number of other restaurants, cafes and even the Syracuse Cooperative grocery store. The artisans are not required to work at the school, and can volunteer to do so if and when they choose. In order for an artisan to teach, he or she would need to find someone else to run the market stall during class-time. This more than likely would be a family member of some kind.

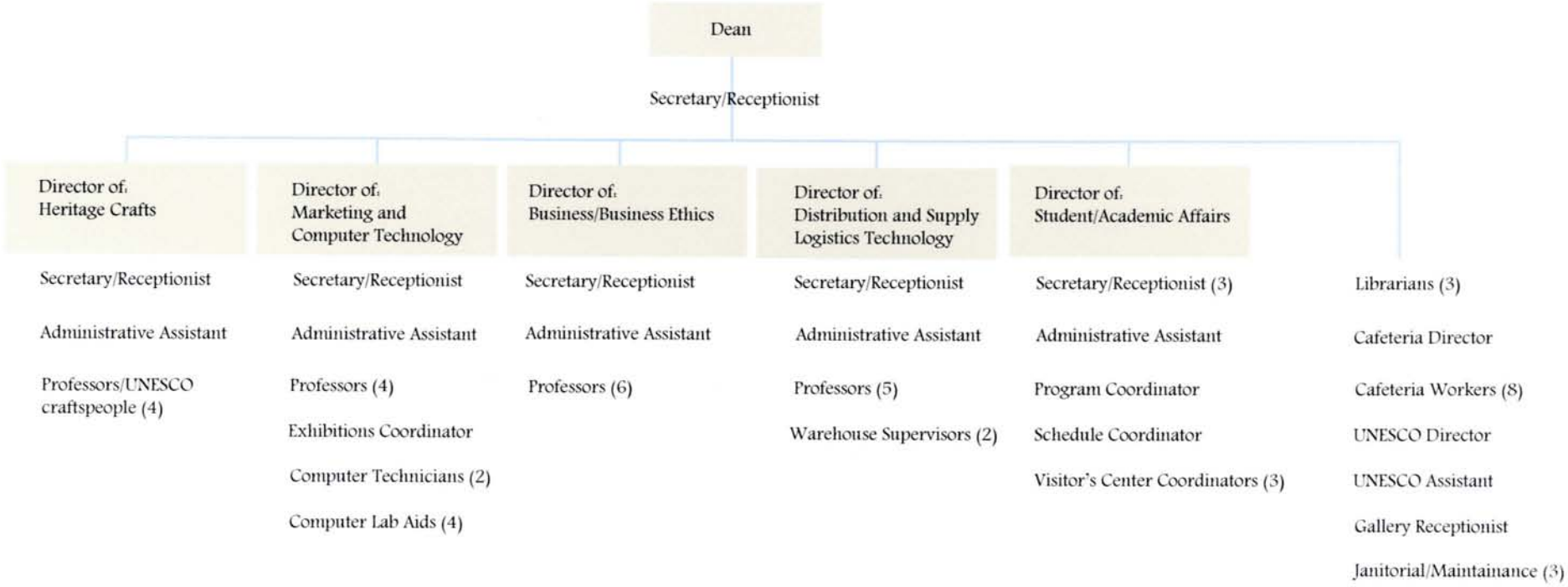
The pieces that have been made then become the responsibility of the business students who run the finances and sell the crafts through the network connections that the marketing students have created. There must be constant communication between each department because in order for the marketing students to properly advertise, they need to know what is

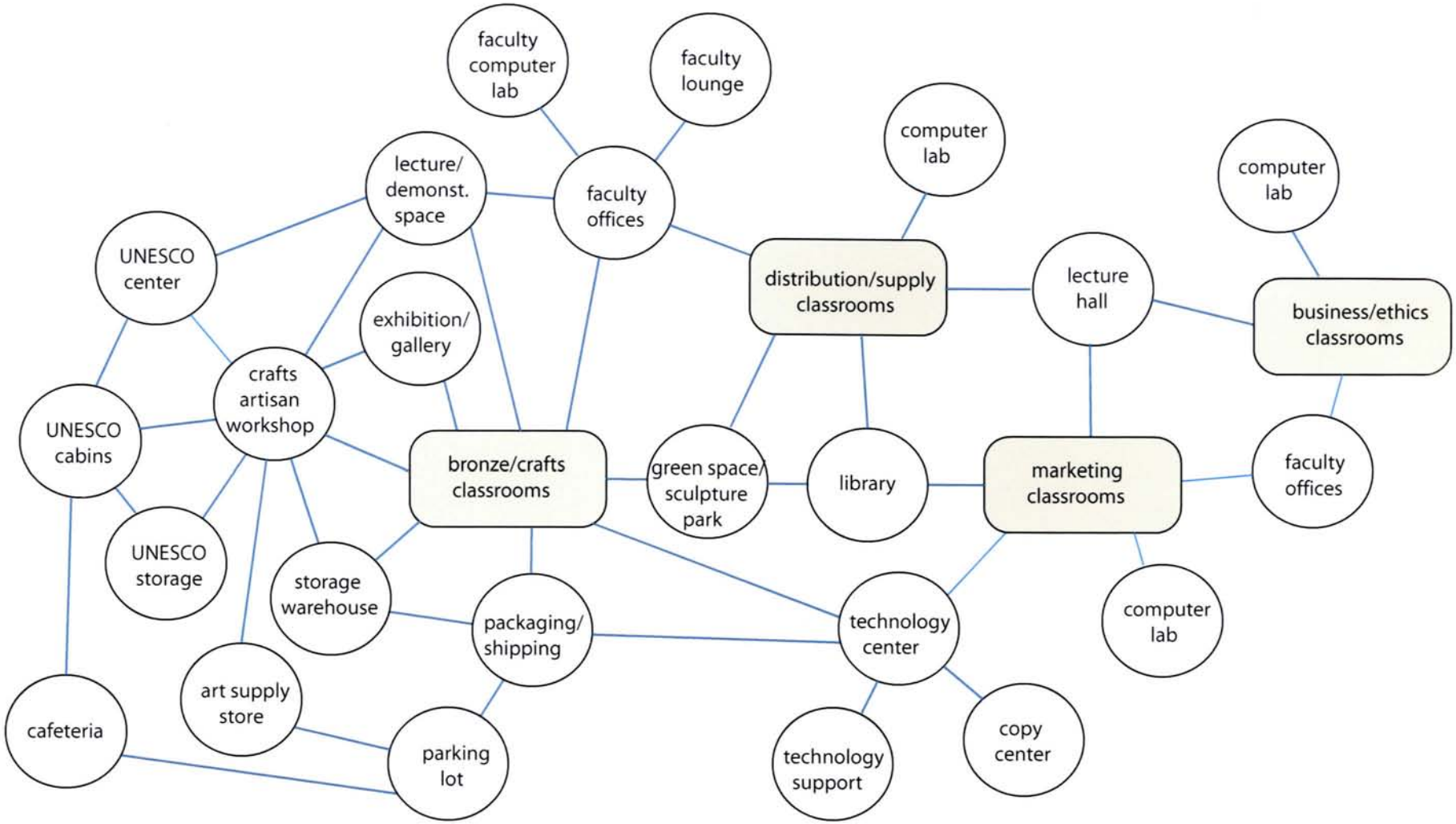
in stock. The business students need to know how and when certain items are being promoted or if there are discounts etc. and the crafts students need to know what items are in demand so as to know what to make the most of.

Once sold, the Distribution and Supply students are in charge of organizing and shipping the products out to where ever they need to go. The entire procedure is a collaborative effort by each of the specialized groups; all are intertwined and dependent on one another.

The campus will be organized so that the architecture reveals this assembly line and each phase in the process will be celebrated as an equally important yet unique cog in the machine.

The whole operation is through the foundation and the school, with the understanding that it is an educational process and once a student has completed his or her two years of study, he or she will graduate and leave the fairtrade exchange. This is in the hopes that students will take the knowledge and experience they gained and use it in their own town or village with their own business. The school's fairtrade commerse is like a school newpaper run by journalism students. It's intentions are to give the students the skills they need as a hands on application.


Dean
Secretary/Receptionist
Director of: Heritage Crafts
Secretary/Receptionist
Administrative Assistant
Professors/UNESCO craftspeople (4)
Director of: Marketing and Computer Technology
Secretary/Receptionist
Administrative Assistant
Professors (4)
Exhibitions Coordinator
Computer Technicians (2)
Computer Lab Aids (4)
Director of: Business/Business Ethics
Secretary/Receptionist
Administrative Assistant
Professors (6)
Director of: Distribution and Supply Logistics Technology
Secretary/Receptionist
Administrative Assistant
Professors (5)
Warehouse Supervisors (2)
Director of: Student/Academic Affairs
Secretary/Receptionist (3)
Administrative Assistant
Program Coordinator
Schedule Coordinator
Visitor's Center Coordinators (3)
Librarians (3)
Cafeteria Director
Cafeteria Workers (8)
UNESCO Director
UNESCO Assistant
Gallery Receptionist
Janitorial/Maintainance (3)


faculty computer lab
faculty lounge
lecture/ demonst. space
faculty offices
computer lab
computer lab
UNESCO center
distribution/supply classrooms
lecture hall
business/ethics classrooms
exhibition/ gallery
crafts artisan workshop
UNESCO cabins
bronze/crafts classrooms
green space/ sculpture park
library
marketing classrooms
faculty offices
UNESCO storage
storage warehouse
packaging/ shipping
technology center
computer lab
art supply store
cafeteria
parking lot
technology support
copy center

Nigerian Foundation for Art and Technology

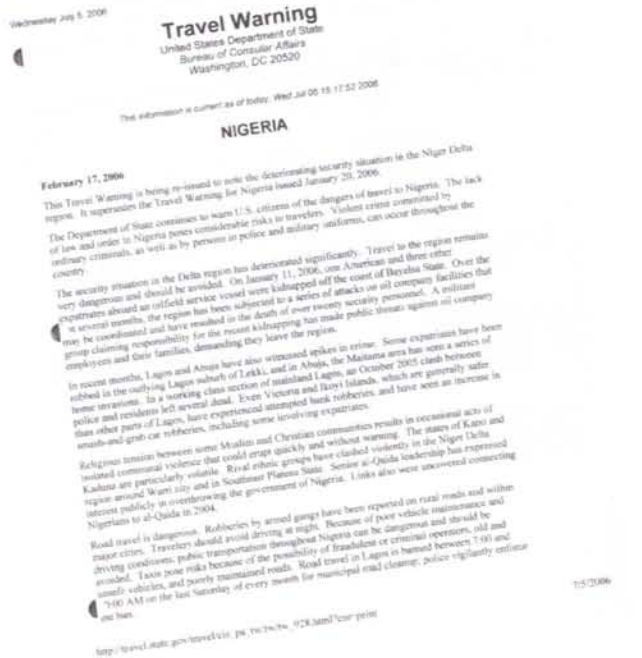
Computer Labs (6) -Information Technology computer lab (3) -Marketing Technology computer lab (1) -Business computer lab (1) -D & S Logistics Technology computer lab (1)	20' x 30'	3,600sq ft
Academic Technology Center (as a part of Student/Academic Affairs)	30' x 30'	900 sq ft
Classrooms (15 shared)	15' x 20'; 20' x 25'; 20' x 35'	7,500sq ft
Faculty Offices (23)	10' X 15'	3,450sq ft
Administrative Offices (20)	8' x 8'; 15' x 15'	2,890sq ft
Small Lecture Halls (2)	35' x 45'	3,150sq ft
Conference Rooms (3)	12' x 16'	576sq ft
Large Indoor/ Outdoor Lecture Hall	60' x 80'	4,800sq ft
Tech Support Office	10' x 15'	150sq ft
Copy Center	12' x 12'	144sq ft
Exhibition Space/Gallery	35' x 10'	350sq ft
Storage Warehouse (finished products ready to be shipped)	80' x 100'	8,000sq ft
Packaging	30' x 35'	1,050sq ft
Shipping	15' x 18'	270sq ft

Storage (UNESCO supplies)	20' x 30'	600sq ft
Storage (craftmen's tools and supplies)	20' x 40'	800sq ft
UNESCO studio workshops (14)	12' x 12'	2,016sq ft
UNESCO Office	10' x 12'	120sq ft
Public Gathering Space	30' x 35'	1,050sq ft
Faculty Lounge	20' x 30'	600sq ft
Student Lounge	20' x 30'	600sq ft
Bathrooms (5)	18' x 20'	1,800sq ft
Cafeteria	30' x 40'	1,200sq ft
Library	60' x 50'	3000sq ft
Art Supply Store	20' x 30'	600sq ft

Visitor's Center
Portable TemporaryHousing for Guest Speakers
Natural Drainwater Filtration Field
Circulation

Total program	49,000 square feet
Total land	21,500 square feet

milieu



Travel Warning
United States Department of State
Bureau of Consular Affairs
Washington, DC 20520

NIGERIA

February 17, 2006

The Federal Republic of Nigeria is a country of extremes. Unpredictable and rational, appalling and awful, fascinating and appealing, joyous and distressing, it is unlike any country I have ever been to before. My fascination with foreign cultures led me to choose a site outside the United States, and the intrigue and a kind of mystique about Nigeria lured me within its boarders. Once I arrived, there was rarely a moment that wasn't pure chaos.

The Bradt Travel Guide portrayed it in these terms: "The country of Ghana is described as 'Africa for beginners'. Well, by the same token, I would describe Nigeria as 'Africa for the very experienced'" (Williams, VII). The country had an astounding effect on me. Almost daily, I would come to the conclusion that I wanted to terminate my travels completely and retreat home, and then minutes later I yearned to experience more and stay an extra month. While conducting my research in the country, I was exhilarated and exhausted at the same time. It was this unique condition of the drastic, the contradictions, the confusion, and the pulls in opposite directions that inspired me so much, and that I wish to convey in certain ways, in my project.

"Doublethink means the power of holding two contradictory beliefs in one's own mind simultaneously, and accepting both of them."

-George Orwell

Population

1700A.D.

1800A.D.

1900A.D.

The scale of human activities can be represented partly be observing population density, both over the globe and over time. How these activities will affect future populations and cultures is of great concern.

The Federal Republic of Nigeria has a total population of 137 million. The population growth rate of 2.8 from the years 1995 to 2000 and a population density of 122.7 people per square km (in 1995) make it a rapidly growing nation. This can be compared to United States of America with a growth rate of only 0.8 and a population density of 27.5 per square km. The significance of this drastic increase between Nigeria and USA as well as the over-all population of the world can be detrimental to the well-being of humankind. In the United States of course, this goes mostly unnoticed. In Third World countries however, where limited resources are dispersed amongst a strained population, problems arise. This dilemma, called the Malthusian Crises has its greatest effects on Africa.

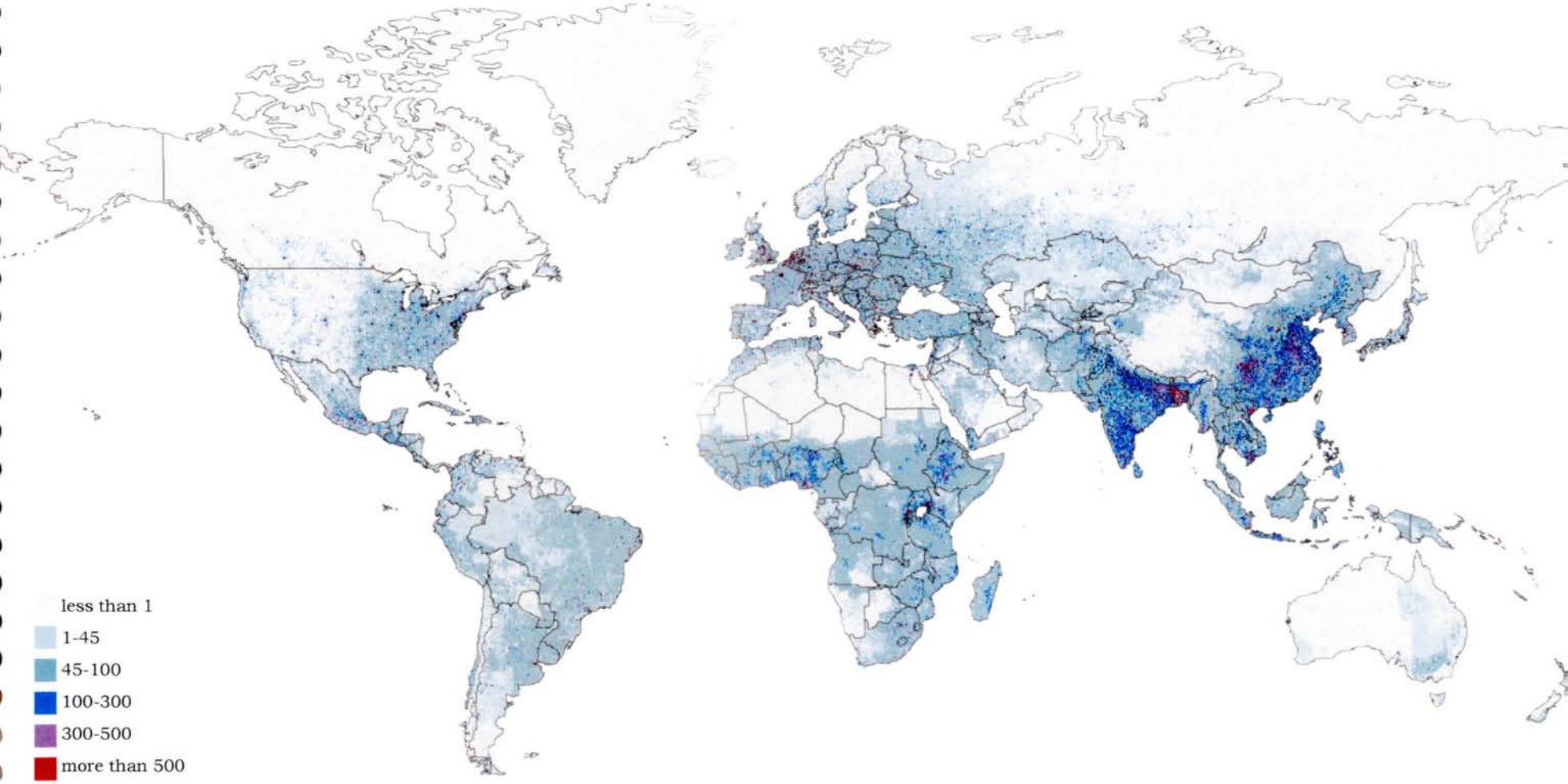
History has seen Malthusian-type crises when whole civilizations failed to adapt to the consequences of their own pressure on the environment and suffered total or partial collapse. Salinization drove farming out of Mesopotamia. Deforestation may have brought the Maya and Easter Island civilizations to an end. In medieval Europe, the extension of farmland into marginal areas brought soil erosion and declined yields. Poor harvests led to malnutrition, lowering resistance to disease and culminating in the Black Death. Societies can collapse if, for one reason or another, they are unable to adapt the technology that might save them. When the climate cooled in 15th century Greenland, the Viking settlers could have survived by abandoning their livestock based economy and adopting Inuit lifestyles, but the leap was too great and their communities died out.

In one way or another, these are all failures of adaptation: failures to change technologies or ways of managing resources in time to prevent the collapse of a key resource. This is pertinent to architecture in that buildings require so many of the resources that need to be conserved and produce so much of the pollution that needs to be reduced. Even if the Nigerians don't foresee the future in this way, it is still important to put in place the technologies that can reduce energy and to think critically about material choices.

Much of sub-Saharan Africa, at least during the period from 1970-1990 was trapped in a Malthusian-type scenario. Rapid population growth was increasing pressure on the land, yet agricultural technology was not adapting fast enough, leading to deforestation, soil erosion and in many places, stagnant or falling yields. For dryland Africa, the technologies and crop variations still do not exist to allow crop yields to keep pace with population growth, leaving migration as the only way to relieve the pressure from many marginal groups. Of course, in many countries inadequate governance, market imperfections and endemic conflict make the task of adaptation all the more difficult, and Nigeria is a prime example of this.

Although some may say architecture is not a solution for these problems, I argue it can be. It is the responsibility of each architect to do what he or she can. After all, shelter is a necessary for living.

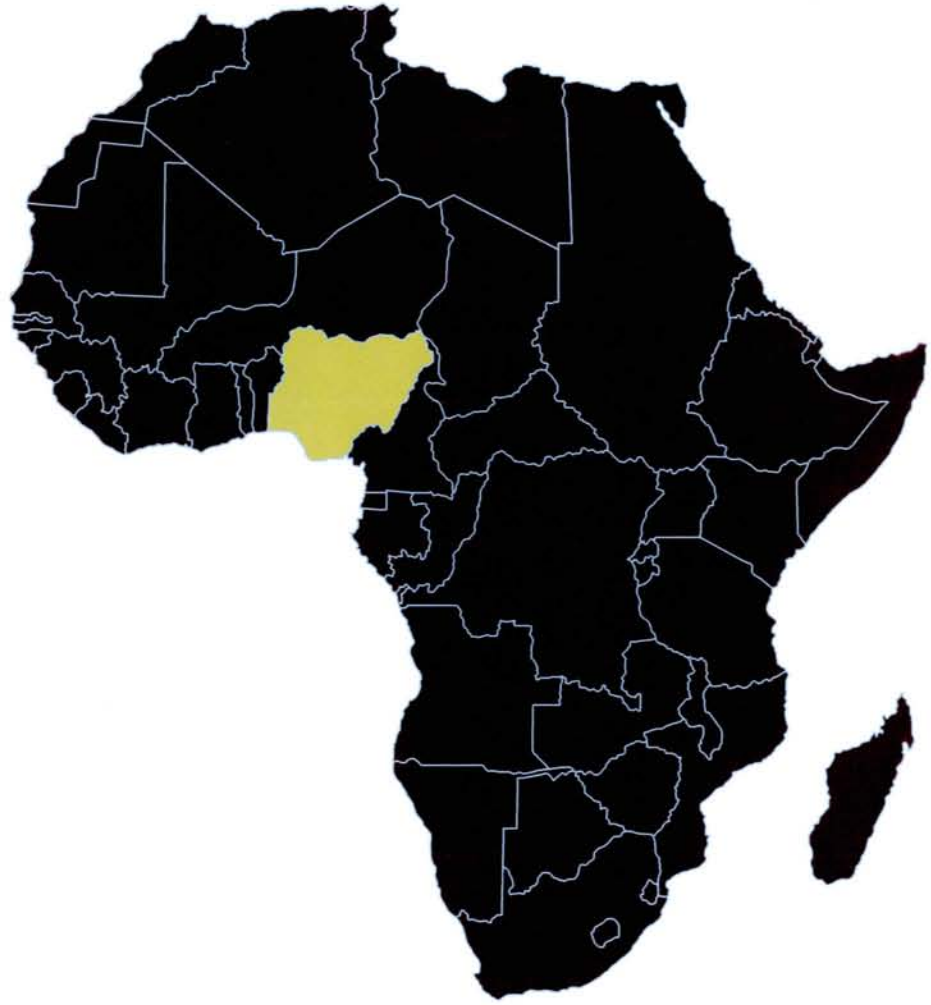
Population Density, 1998
per square kilometer



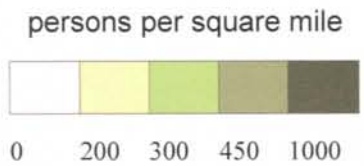
Nigerian Population

Nigeria is located on the west coast of Africa on the Atlantic Ocean just south of the Sahara Desert and just north of the equator. It contains the largest population in Africa with an estimated 137,253,133 people (2004 CIA Factfile)- a figure that represents over 4% of the world's entire population. In a culture where child morality has traditionally been high, it is considered honorable for women to bear many children. This becomes evident while walking down any street in Nigeria. Children are ubiquitously placed and it is not surprising to see woman carrying one infant on her back and have an adolescent carrying a toddler by her side. The average number of children per woman in Nigeria is six and in situations where a man may have more than one wife, he could have as many as 20 children. With this in mind, it is no wonder that 43% of the population is under the age of 14. Based on the African rate of growth, the country could contain over 200 million people by the year 2020 (Williams, 3). The immense population growth of recent has had adverse effects on the people of Nigeria, in particular in dealing with health, available food sources, services and infrastructure. Merely to remain at current per capita levels, agricultural production, industrial and other economic output, and provision of health, education and other social services would all need to double within the 25 years.

Architecture can by used to assuage some of the strain that the current population is experiencing and if organized and designed well, it can help to alleviate some of the many problems of the demands on Nigeria.

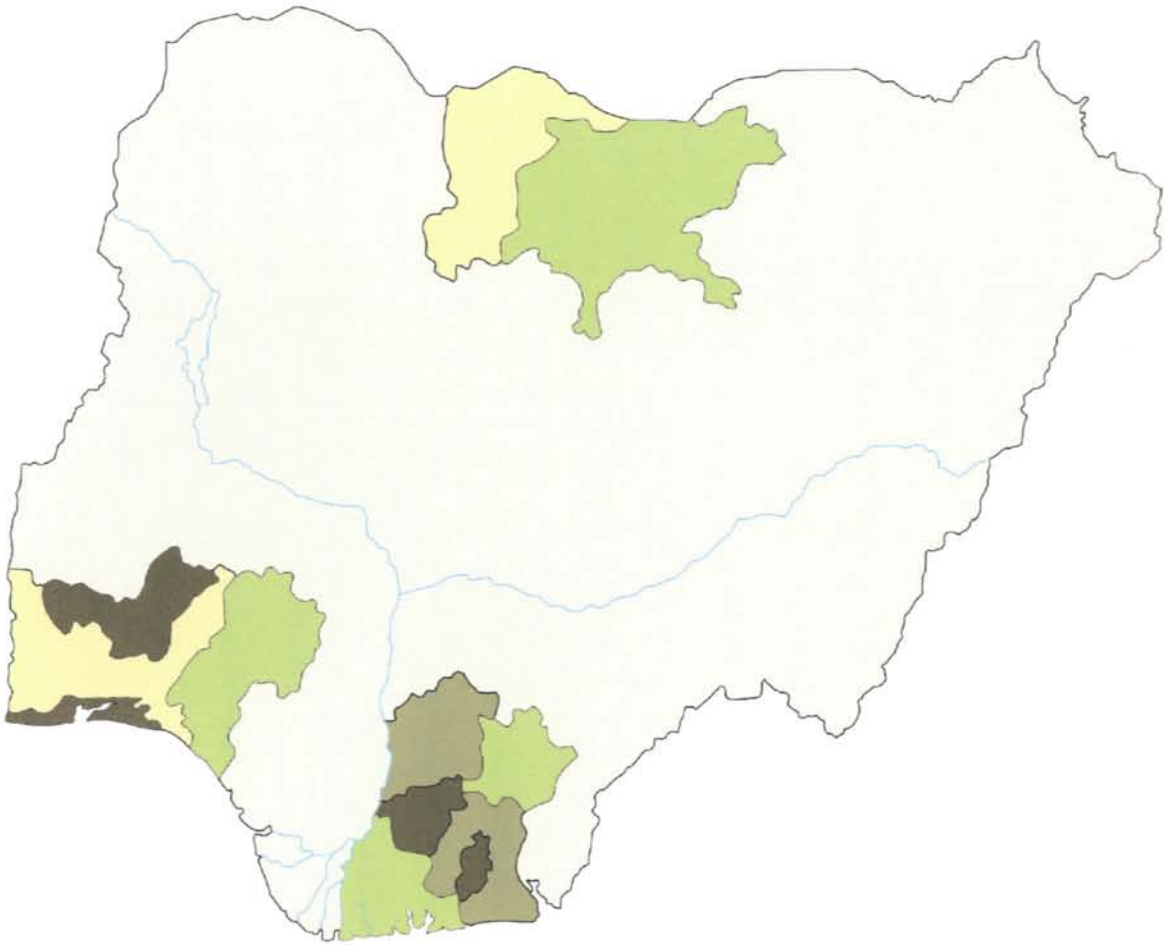


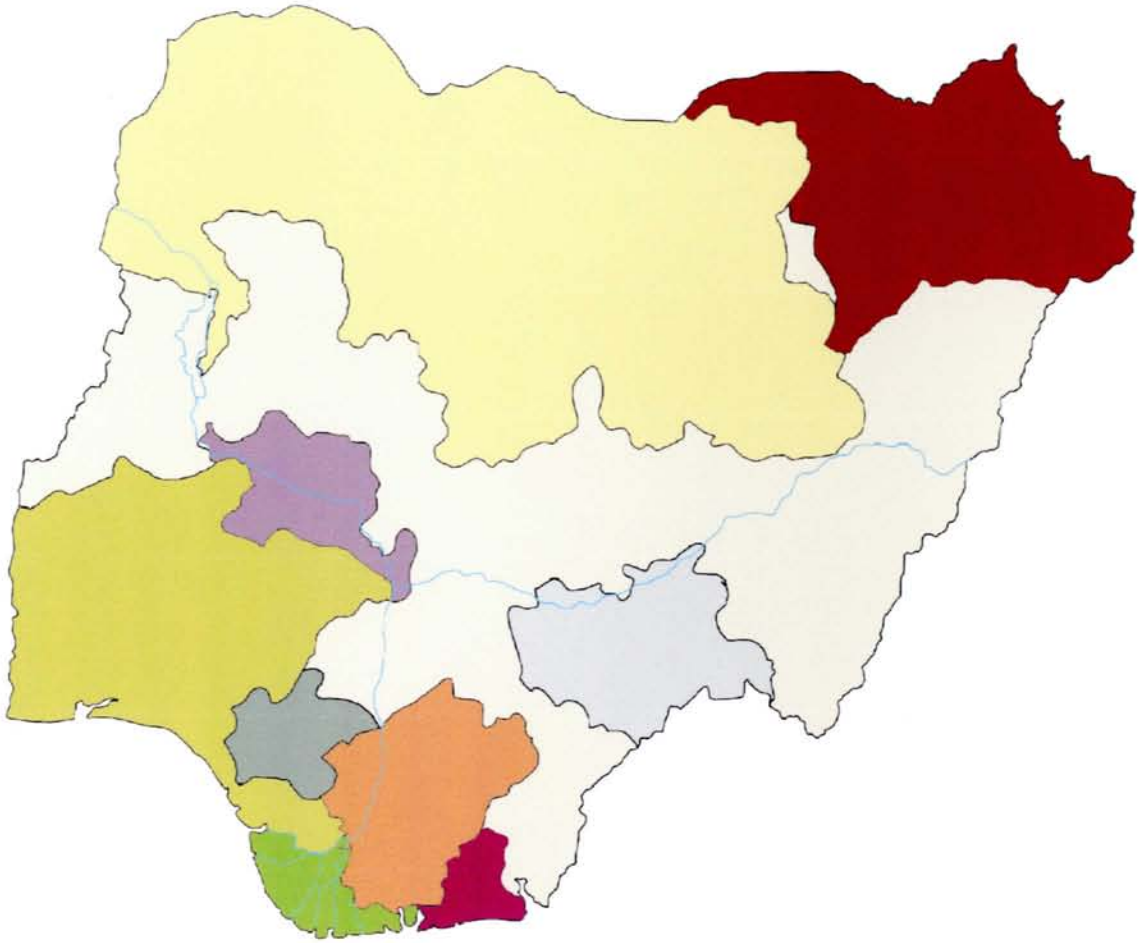
Population Distribution in Nigeria:



Nigeria's population is broken down into two main groups. The north is inhabited by primarily Muslim and the south is primarily Christian. Much of the country's civil conflict has been a result of the clashing of these two groups. When united, the different cultures are, in the words of former Prime Minister Abubakar Tafawa Balewa, "a source of great strength".

Benin Kingdom fluxuated in size over the centuries and at one time, its borders spread all the way to Lagos and contained much of Yorubaland and Ife (Ibo).





Tribal Groups

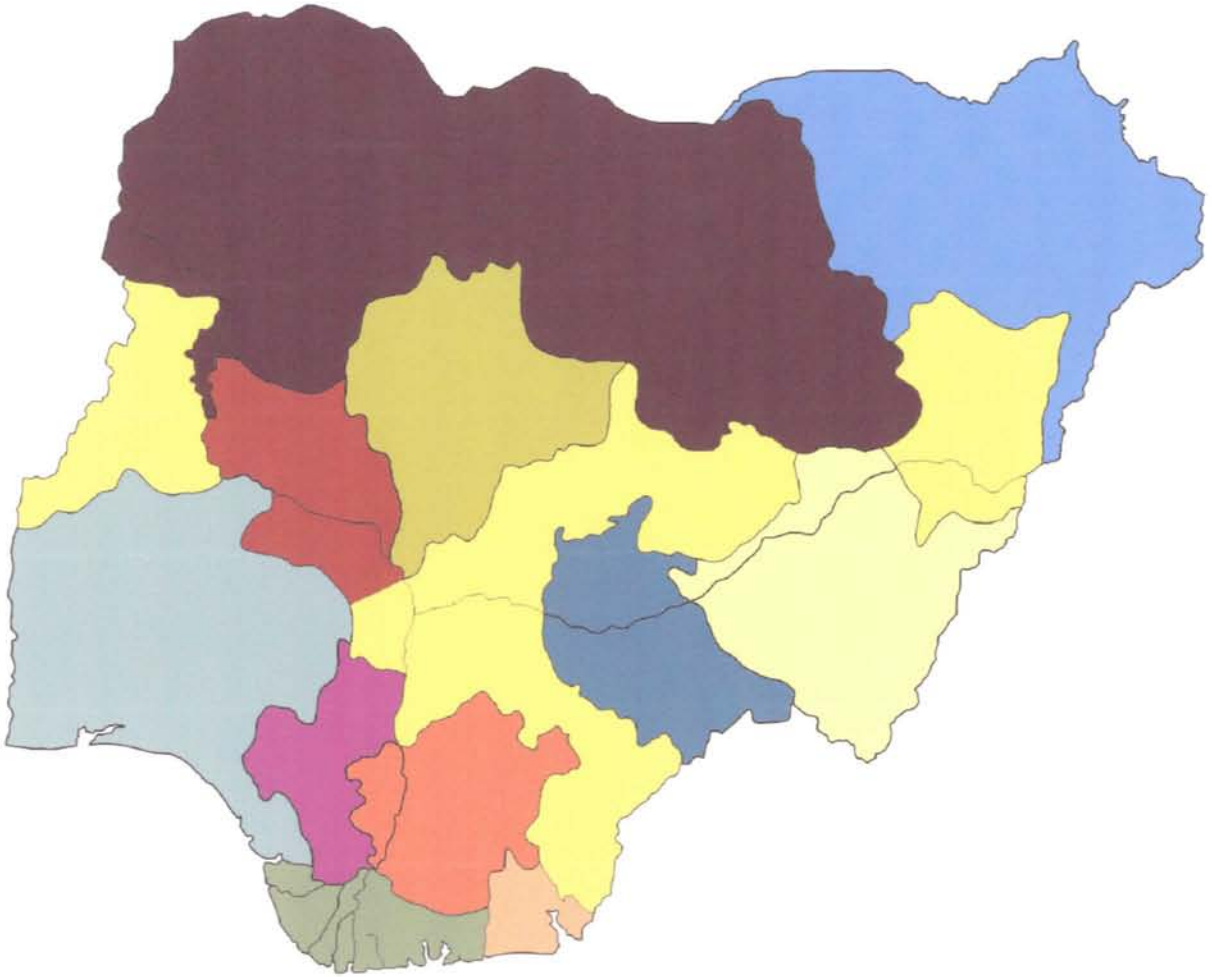
Major Tribes

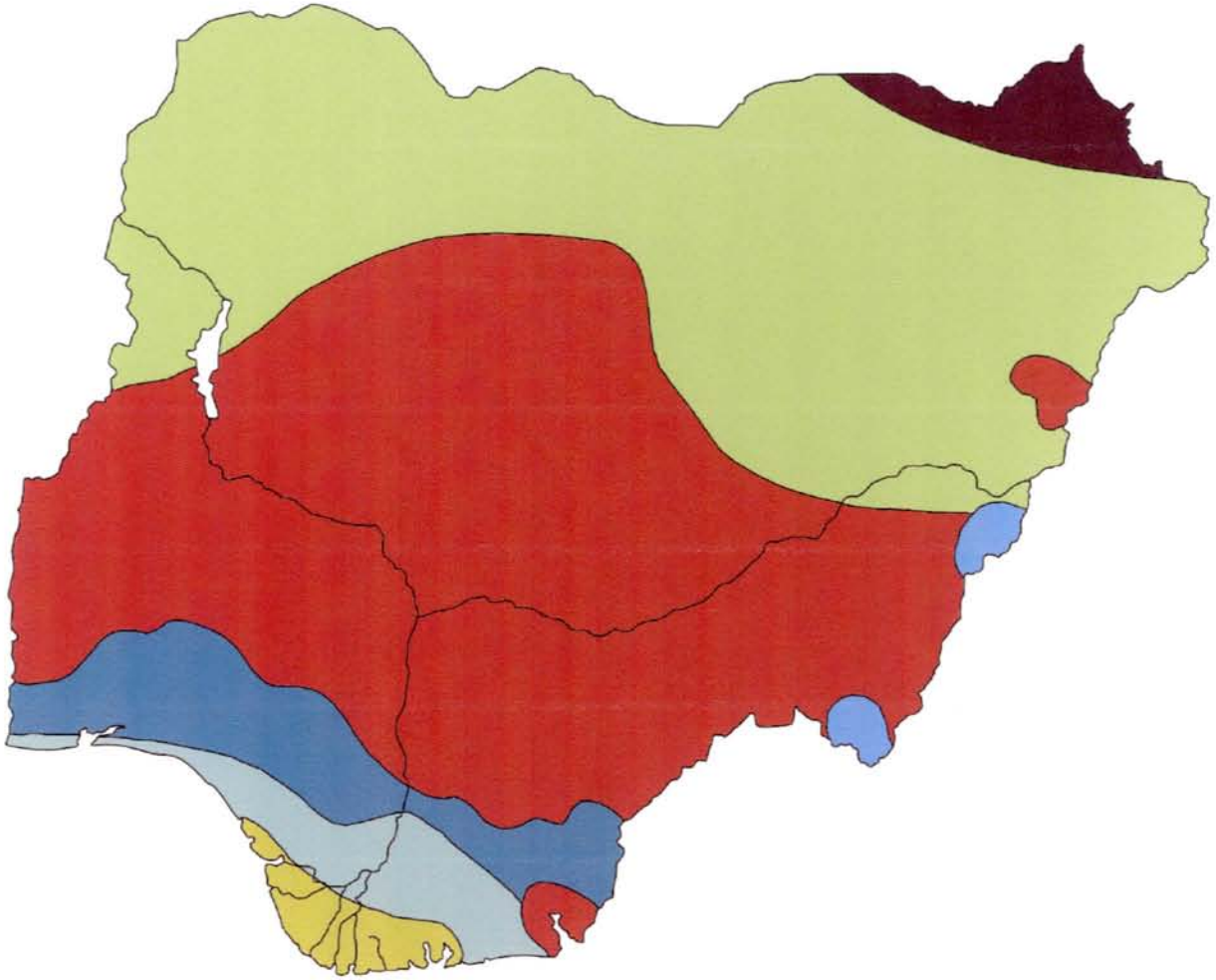
- Ibo
- Hausa and Fulani
- Yoruba

Minor Tribes

- Edo
- Tiv
- Nupe
- Ijaw
- Kanuri
- Ibibio-Efik

Linguistic Groups



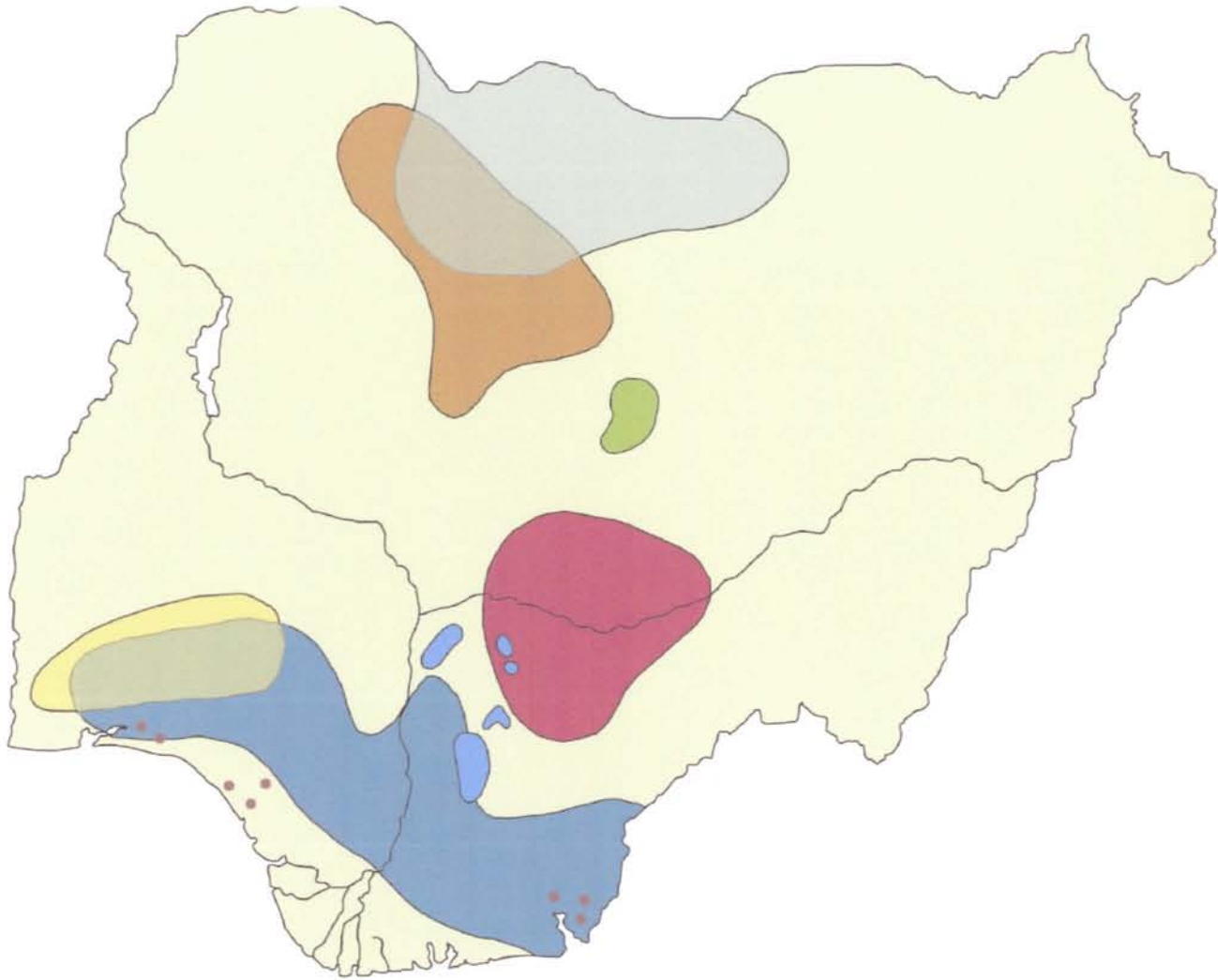


Vegetation

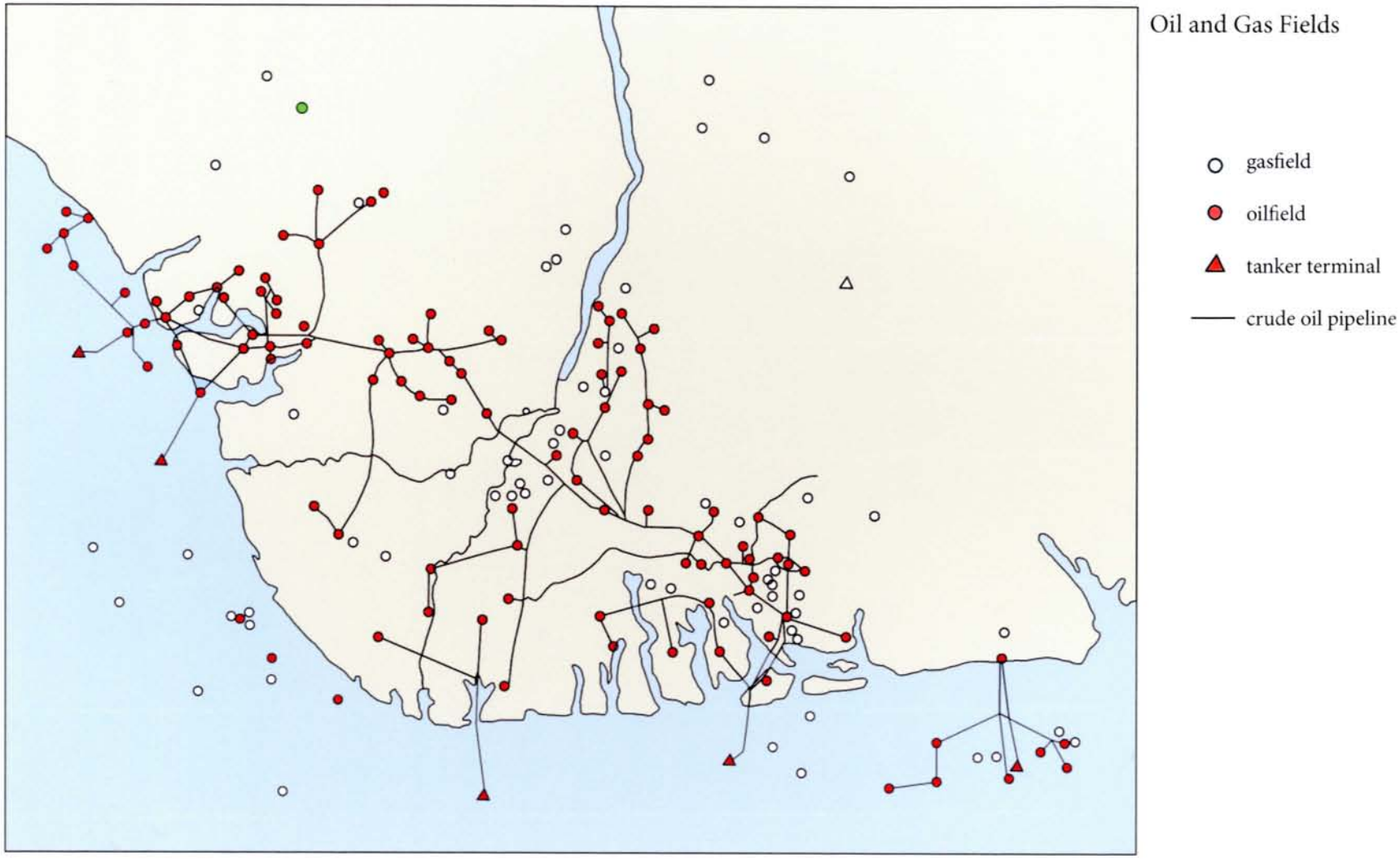
- shortgrass savanna
- tall grass savanna
- mangrove (saltwater swamp)
- sudan savanna
- montane vegetation
- high rainforest
- freshwater swamp

Economic Activity

- cotton
- cocoa
- tin ore and columbite
- peanuts
- palm oil
- coal
- sesame seed
- rubber

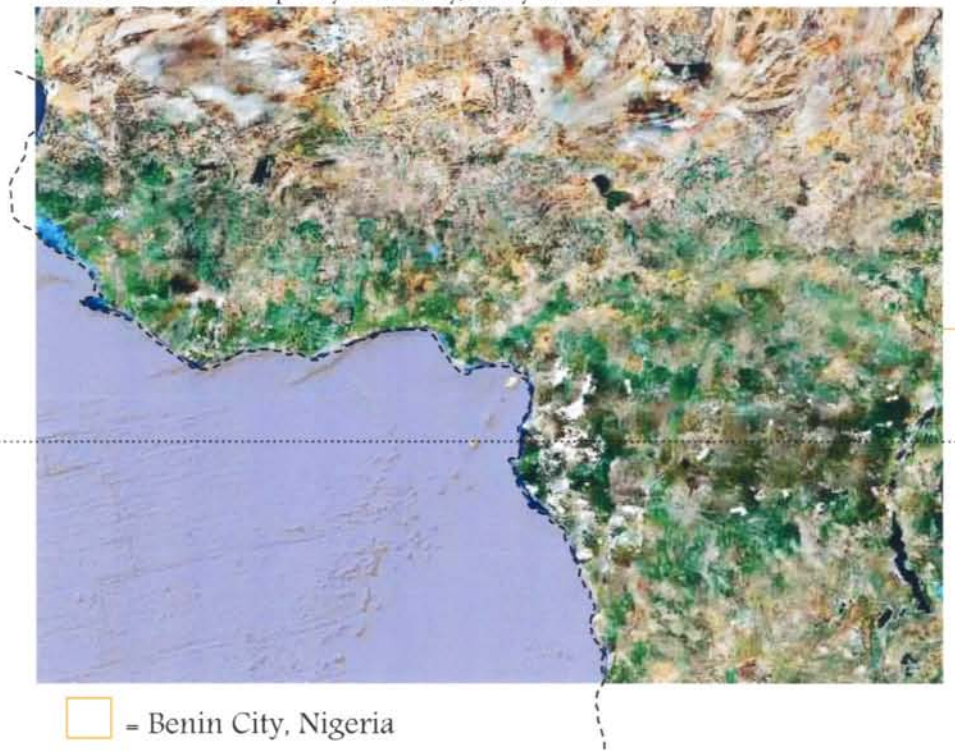


Nigeria is Afirca's most populated nation and one of its richest. It possesses vast reserves of petroleum and natural gas, significant deposits of tin and columbite and is a major producer rubber, cocoa, peanuts, cotton, palm oil and kernels and timber. As with everywhere else in the world, Nigeria's resources are being used very rapidly and eventually, conservation is going to be an major issue.


Oil and Gas Fields
gasfield
oilfield
tanker terminal
crude oil pipeline

Geography:

Travelling north from the Atlantic Ocean, Nigeria is comprised of the tropical coastal plain which extend inland about 75 km. Away from the coast are thick forests (rapidly disappearing from deforestation), and then higher savanna grasslands in the central region. In the north, the landscape is hot semi-arid bush that boarders the Sahara Desert and consists of purely of scrubby, sandy terrain.



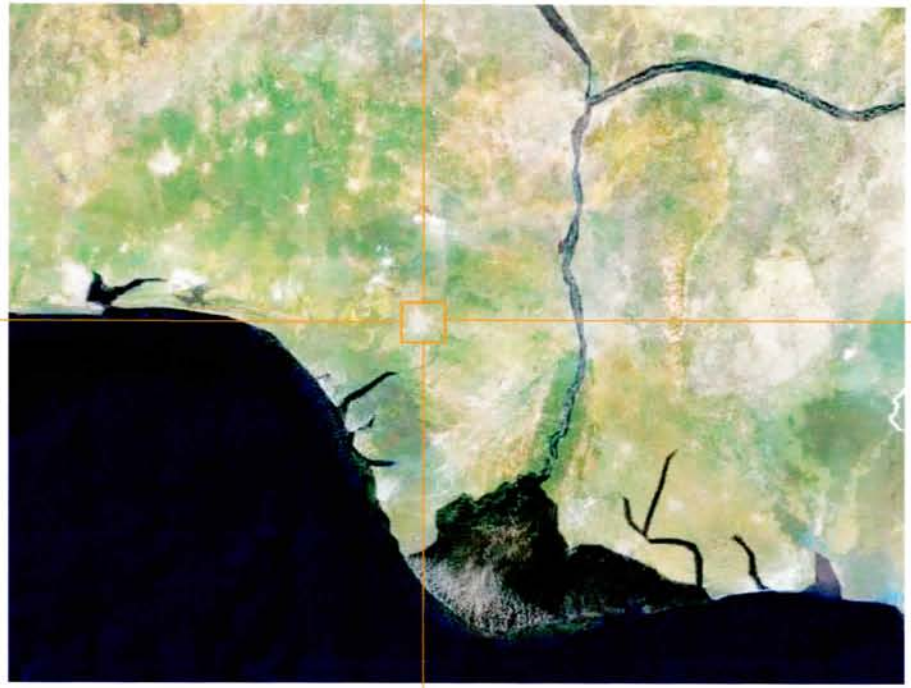
= Benin City, Nigeria

Climate:

Nigeria's climate varies from tropical at the coast, to sub-tropical further inland, to arid in the north. There are two distinct seasons, a wet season (April-August) and a dry season (November-March). The coast receives more rain annually than the rest of Nigeria (up to 4000 mm per year). Average temperature is 98.6 degrees and humid in the low-lying coastal areas.

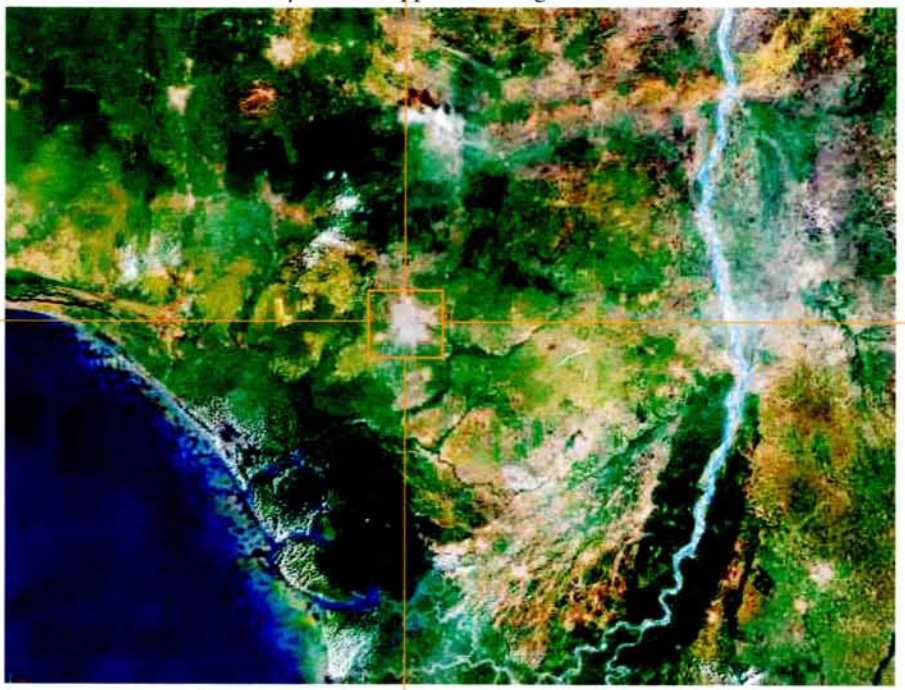
Rivers:

The Niger is West Africa's greatest river, and the country's main geological feature. It boasts an extrordinary course, rising little more than 300km from the sea to its origins in Sierre Leone. The delta extends inland for more than 200 km and along the coast for 100km, eventually reaching the sea at the Bight of Benin. The Niger transverses four countries, though the whole basin covers nine.



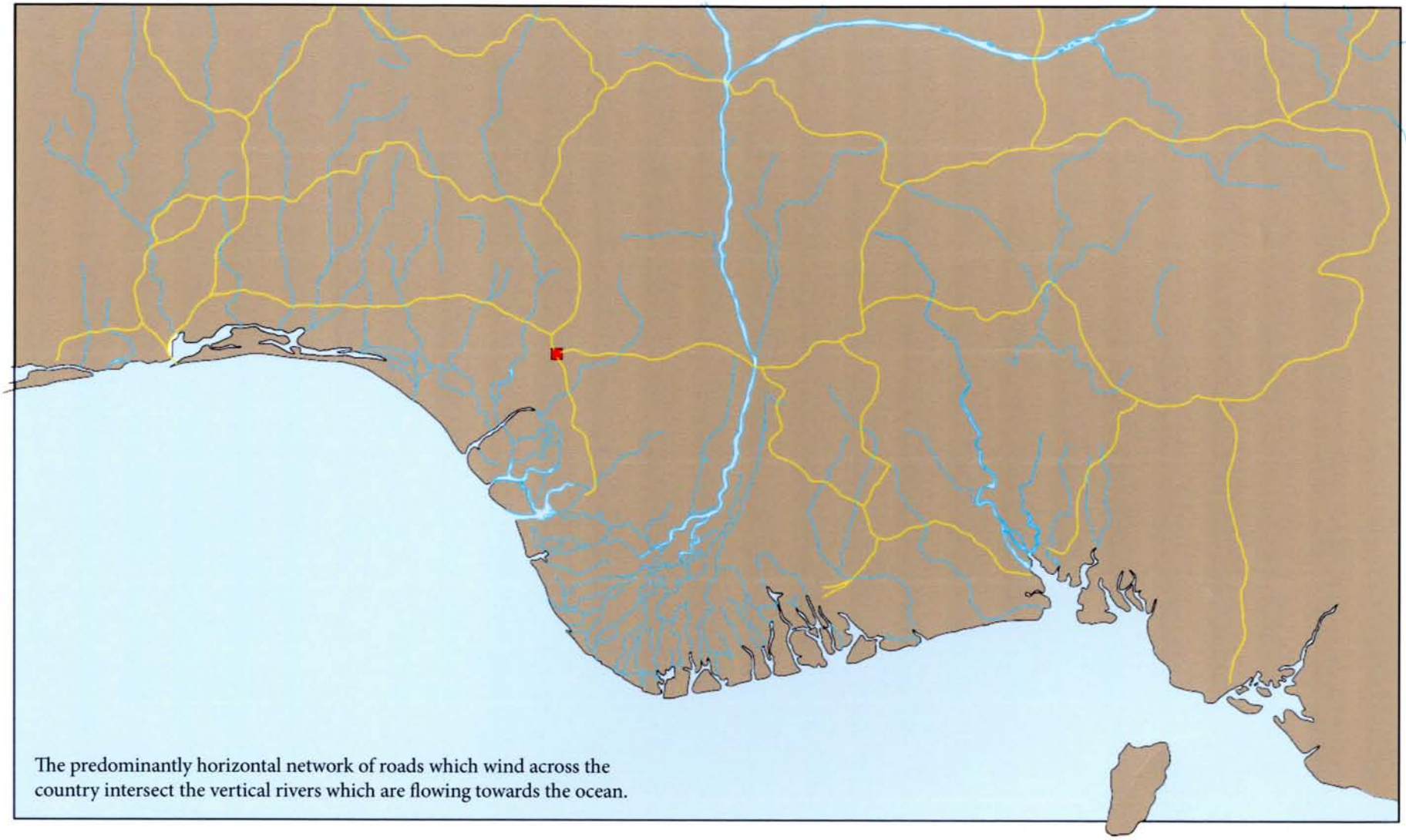
Transportation:

Nigeria's transportation infrastructure is a major constraint to economic development. Only 30% of all roads are paved and still many of these are in very bad shape and have been decaying for years. Police and army roadblocks exist every few miles and many times charge a bribe to pass. Nigerian Airways has gone out of business and all trains on the railways have stopped running.



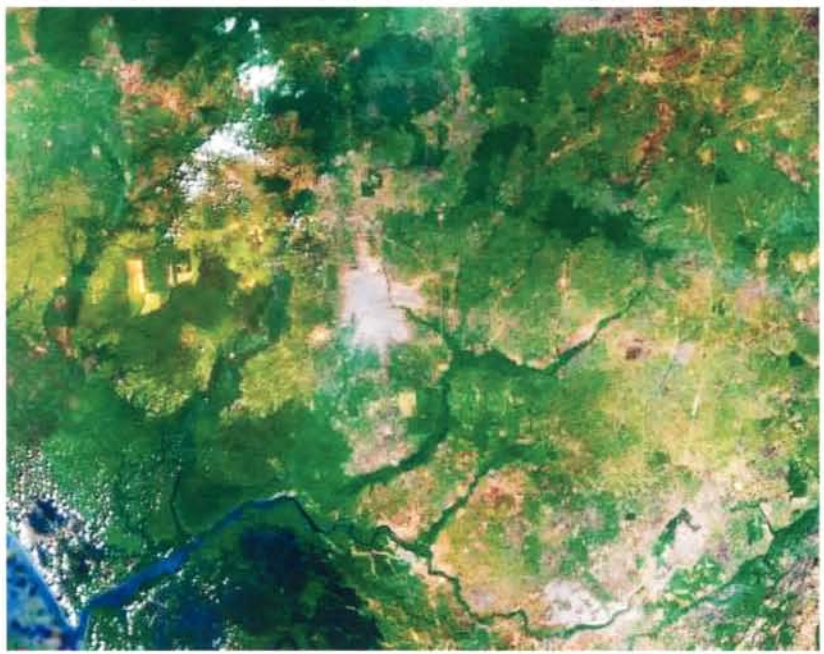
In many ways, the current global environmental crisis is a design crisis. It is a consequence of how products are made, buildings are constructed and landscapes are used. Design manifests culture, and culture rests firmly on the foundation of what we believe to be true and of main priorities about the world.

Over the past fifty years humans have reduced a complex and diverse landscape into a network of asphalt and housing developments. We have done this by leveling subtle topographic changes, filling ponds and streams and clear cutting forests to make way for whole new towns to be erected from scratch. These towns, indifferent to place, have come to consist the same elements as the adjacent town, as if a template was used to create all of them.



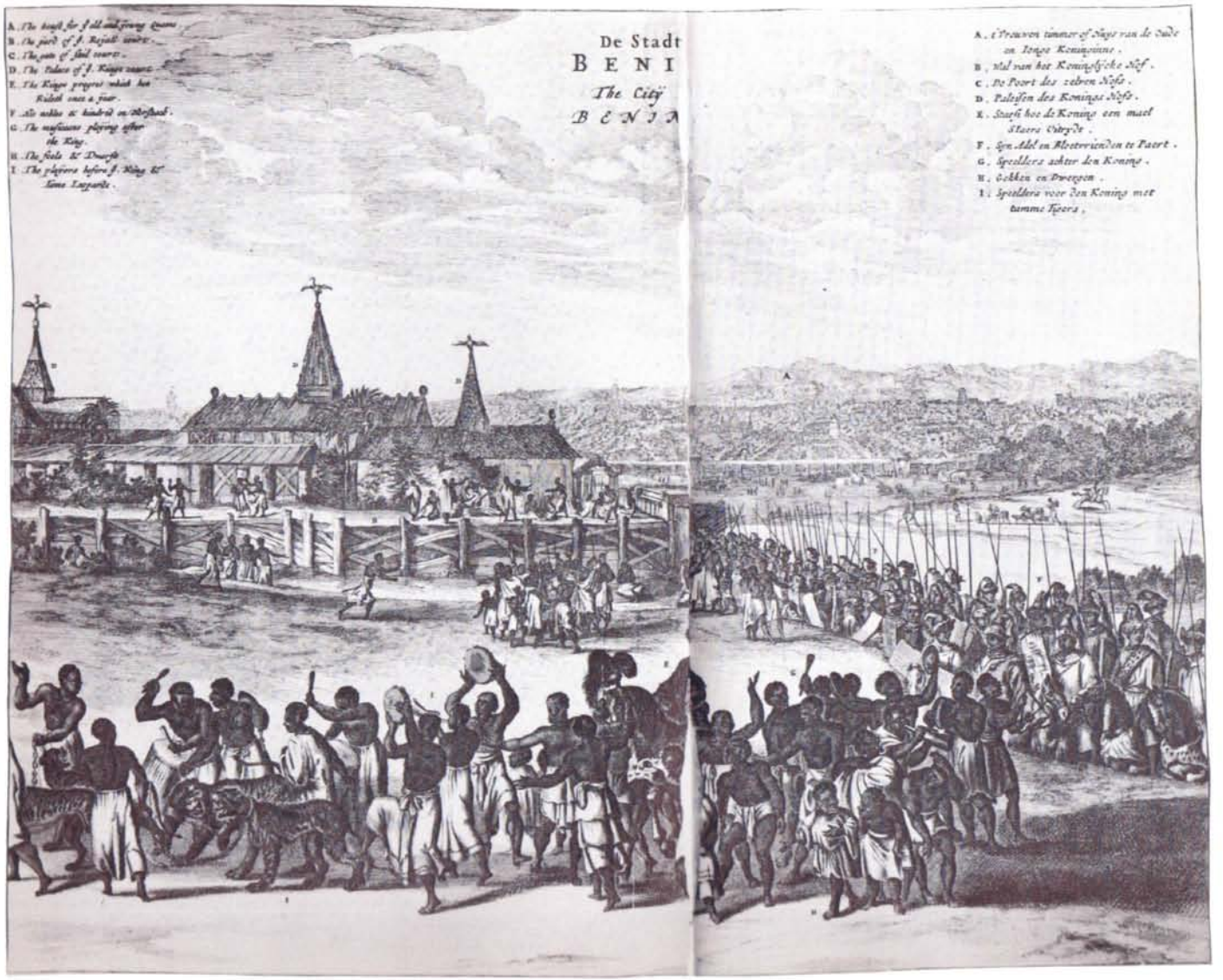
The predominantly horizontal network of roads which wind across the country intersect the vertical rivers which are flowing towards the ocean.

Benin City is the capital of Edo state in southern Nigeria, 200 miles east of Lagos. There are several daily flights from Benin City to Lagos which takes about 40 minutes (by car-four hours).



Benin City has a population of 1,147,188 people. It is a rapidly de veloping metropolis and draws a large profit from the rubber and oi industries.

site


De Stadt
BENI
The City
BENIN
A. The house for ye old and young Queens
B. The gate of ye Royall women.
C. The gate of Iboe towers.
D. The Palace of ye Kings women.
E. The Kings progress which he
Rideth once a year.
F. His nobles & kindred on Horseback.
G. The musicians playing after
the King.
H. The fools & Dwarfs.
I. The players before ye King &
Lions Leopards.
A. 't Vrouwen timmer of Hays van de oude
en Jonge Koninginne.
B. Hal van het Koninglycke Hof.
C. De Poort des zebren Hofs.
D. Paleysen des Koninges Hofs.
E. Staetsi hoe de Koning een mael
Staets Ciergyde.
F. Sijn Adel en Bloetvrienden te Paert.
G. Spoellders achter den Koninge.
H. Gekken en Dwergen.
I. Spoeldera voor den Koning met
tamme Tygers.

The history of the Kingdom of Benin has been written by historians to have been founded over a thousand years ago by a people that migrated from Egypt. When they arrived, they found small scale villages that had esisted in the region since as early as 500A.D. The Empire of the first Dynasty was founded about 900 A.D. The title of king was called 'the Oba', with a monarchy very parallel to that of the British Kingdom (these two are in fact the only two recognized kingdoms in the world). It was during the reign of this first Oba that many villages were founded as well as the groups of craftsmen known as Onwina and Igbesamwan. The Onwina are the traditional carpenters and the Igbesamwan are the carvers of wood and ivory. It was these craftsmen that produced the wooden plates and bowls, mortars and pestles and the wooden heads which were placed on the ancestral shrines.

In 1170, after the collapse of the first lineage of rulers, Price Oranmiyan arrived from Ife to Benin and started the second dynasty. He brought the first horses to Benin.

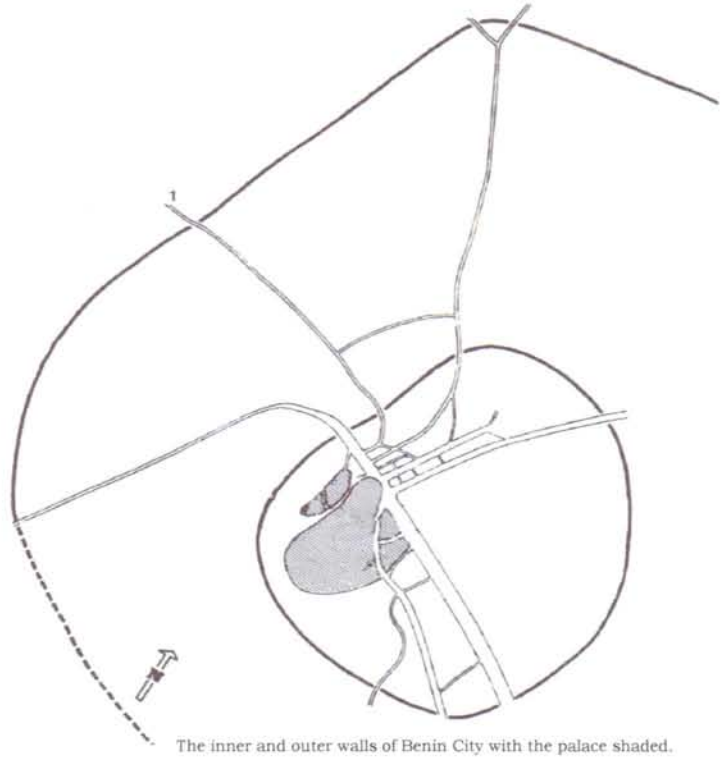
It was at this time that the Oba was established as an all-powerful, all-encompassing ruler who ran a very strict government. He had the final say in all jurisdictional matters, denying any opportunity for appeal. Wearing his finest, he made a procession through the streets of Benin once a year in order for the people to witness him and his might. He was always escorted by hundreds of his wives along with all of the palace chiefs. He employed the majority of the craftsmen [such as the bronze-casters and the wood/ivory carvers], controlling the trade that operated between the people of Benin and outside villages.

On top of the emperor status, the Oba was also a central figure in the religious realm of the nation. He was believed to have supernatural powers and it was also recorded that he needed neither food nor drink. He never slept and it was forbidden to suggest typical "human" tendencies or activities, such as washing, exercising and even dying, in reference to him. The organization of the palace activities were planned around the sense of both awe and dread that surrounded the Oba. No one, other than a few important chiefs, was allowed to see or approach him during a religious practice in which he went extended periods of time without seeing anyone at all. even when admittance was allowed, speaking directly to the oba was not an option. Remarks were relayed through the chiefs.

Overall, however, the Oba acted as a great spiritual leader and provided his people with a great deal of confidence. The general belief amongst the public domain was that life was brief and saturated with a great deal of danger. Evil spirits were prevalent, but through any trials or disasters one could always turn to their Oba; for he was the great earthly ruler who maintained a connection with the gods and operated as protection against evil.

In 1255 A.D. the location of the present day palace was established. At the time, the Uzama Nihiron, or The Kingmakers (whose power equaled that of the Oba), were responsible for the kingdom and the prince until he was old enough to rule for himself (in the event that his father had died and the throne was vacant). Ewedo the prince was concerned about the power and centrality of the Uzama Nihiron and so after a battle, he moved his palace to the present King's Square. He established many new laws and created the judicial system, including a prison which was used up until 1897. He also changed the name of the kingdom from Ile to Ubini or 'Benin'.

In 1280, the Oba, Oguola ordered the digging of trenches around the entire city to deter his enemies from invasions. This task took three years to complete.
Oguola wished to introduce brass-casting into Benin so as to produce works of art similar to those sent to him from Ife. He therefore sent a messege to the ruler of Ife for a brass-smith and a man named Iguegha was sent back to the Oba. Iguegha was



The inner and outer walls of Benin City with the palace shaded.

very clever and left many designs to his successors. He was as a result deified, and is worshipped to this day by bronze-casters. The practice of making bronze for the preservation of the records of events was originated during the reign of Oguola.

In the 1300's, the Oba's palace operated as a city in and of itself, enclosed and protected by 20-foot walls. The palace was not only the Oba's dwelling, but it was also the center of government, a military headquarters and barracks, and a cathedral. It was a separate community, denying living allowance to anyone other than the Oba's family. Only this elite few were allowed to build or be buried within the confines of the palace, yet a labyrinth of buildings existed within its great walls due to the size of the enormous establishment and the hundreds of palace officials it demanded for its functioning. The multitude of buildings consisted of giant halls in which to host people, long galleries, women's quarters and living quarters for the Oba, his family, and the palace officials.

It was in 1440, during the reign of Ewuare the Great, that the kingdom drastically prospered and much of Benin's present identity is a result of him. Ewuare was very respected and was considered a great magician, physician, traveler and warrior. He traveled over much of Nigeria, Dahomey, Ghana, Guinea and the Congo before he became Oba and so he had a worldly understanding of life outside the kingdom. Upon his return, he constructed quality roads in Benin in particular the streets of Akpakpaua and Utantan.

The town rose to importance and gained the name of 'city' during this time. It was Ewuare who had the innermost and greatest of the walls and ditches made around the city and he made powerful charms and had them buries at each of the nine gateways to the city to nullify any evil charms that might be brought by people of other kingdoms to injure his subjects.

When he was young and not yet crowned 'Oba' he was caught sneaking around the city, which was forbidden to him. He was captured by officials but a slave named Edo freed him and he spent the night as a runnaway under a tree. When he awoke in the morning, he discovered blood dripping down on him from above. He jumped up to see a leopard in the tree branches with blood dripping from his mouth. He then saw with great surprise that he had been lying on a snake during the night. He quickly killed the leopard and the snake and vowed that if he should ever become Oba of Benin, he would make that tree a place of worshipping the gods of his destiny. This vow was fulfilled and every year of his reign he sacrificed a leopard and this example was followed by his successors. The symbols of the leopard and the serpent remain icons of the power of Benin Kingdom to this day. In return for the kindness shown to him by the slave Edo, when Ewuare became Oba he changed the name of the land to be 'Edo'. This name remains today as Edo state.

It was this same ruler who, during his later years made a immense mistake. His two sons, who had been feuding, poisoned each other and both died. Ewuare was so distraught by this that he made a strict law forbidding anyone in the land of either sex to wash and dress up, or to have carnal intercourse for three years. This rule caused a large number of people to migrate out of Benin to neighboring villages. The Oba, seeing the kingdom's population decreasing revoked the law, but still the people did not return. To prevent any further desertion, he began to tattoo the bodies of his subjects so that they might be easily identified among the people of other tribes. This was the origin of the present day tribal markings still popular at this time.

Many of the statues in the current King's Square are from the time of Ewuare's rule, including a statue of Emotan, a woman who sold her foodstuffs in the Oba market and befriended Ewuare. She later warned him of the potential danger of the chiefs who disliked the Oba and had conspired to kill him. It was the devotion of his followers that saved Ewuare's life again and again.

Ewuare was also the first Oba of Benin to come in contact with Europeans in 1472.

The Oba greatly encouraged the ivory and wood carving in Benin and the trade thrived during his rule. He created a State Council and introduced the royal beads and scarlet cloths that are worn by every Oba.

1486 The site of Benin when discovered by the Europeans for the first time was notable. The city itself existed on a low-lying plain that was covered with a brilliant red sand. In its backdrop was a dense and [at the time] incredibly healthy tropical rain forest. This rain forest acted as a natural barrier, along with the hilly countryside that sheltered the rest of the city [other than the southern portion]. There existed merely one road that allowed passage into the city while the dense vegetation scattered amongst the city provided an impenetrable mangrove forest. Heavy fortification also existed with the three walls [built in the 13th century] that enclosed the city at the height of its reign. The trees were on top of submerged water, growing in about 18 inches of water. The scope of the city was exceptionally strong.

1500's Having been discovered by the Portuguese, Benin was growing rich during the 16th and 17th centuries through the slave trade on the Bight of Benin's shore. The Bight of Benin, or "slave coast," was where most West Africans were sold [typically by local rulers] to foreign slave traders. The resources gained from this selling of slaves last until the early 1700's when the European slave trade entered a major decline.

1800's Benin City, despite a few hardships, is still functioning much like it did in 1472. The Oba was still the spiritual and governmental leader and the ancient crafts of wood-carving and bronze-casting were continuing to propel. Most of the ritual ceremonies remained in tact and multiple sacrifices in response to the oba and current dilemmas were still being made. In 1891 a victim knelt before his executioner at the annual consecration of the royal regalia and plead, "The white men who are greater than you or I are coming shortly to fight and conquer you."

1897 The Benin Massacre, or Punitive expedition was a military excursion led by a force of 1,2000 British soldiers. The invasion captured, burned and looted the city, bringing to an end the highly sophisticated, developed nation state. During the conquering and burning of the city most of the kingdom's precious artwork including the bronze was either destroyed, looted or dispersed. This expedition resulted in the annexation of the territories of Benin to the rapidly growing areas under control of the British in the lower Niger zone. These events ended nearly 900 years of cultural development win Benin, exposing the city for the first time to the confines of literate history.

Benin city in 2006_
population. 1,147,188 people
location. Edo state, southern Nigeria.
200 miles east of Lagos.
function. a port city on the Benin river.
center of Nigeria's rubber industry.
plays a large roll in the processing of palm nuts for oil.

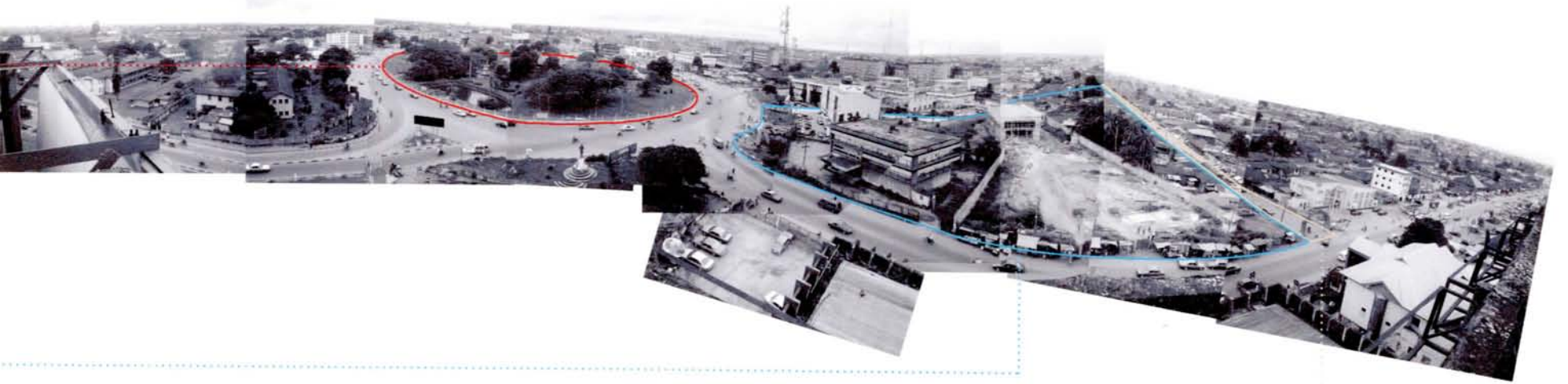
Benin City, a summary timeline

500's	Benin City is established and begins its operation of a organized urban community.
600-700's	a monarchical type of government is founded in which the office of the head of government is passed from father to eldest son.
1200's	the Oba dynasty begins. Oba Oguala begins control over his kingdom, beginning with the construction of the 3 walls for fortification.
1300's	the construction of the Oba palace begins.
1470's	word reaches Europe about the empire of Benin.
1472	an entire succession of European settlers arrive in Benin City; including the Dutch, French, British and Portuguese.
1500's	Benin is finding tremendous wealth in response to its role in the slave trade with europe. The society is highly developed and functioning as planned by the monarchy. It becomes the capitol city of the Benin Kingdom.
1600's	this is the peak of the cultural development of Benin City prior to the 1897 'Benin massacre.' At the height of its splendor, the prosperity greatly reflected by the beauty and complexity of the art/artifacts of this time frame. Benin City is now referred to by surrounding cities/villages as 'the Great Benin.'
1702	Benin City takes a turn for the worse. the city is depopulated, experiencing economic and social effects of a civil war.
1800's	the city is focusing on recovery; overall the city is still a bit run-down, yet the fabric of the city is still similar the time of the initial European interaction.
1891	"The white men who are greater than you or I are coming shortly to fight and conquer you."
1897	the 'Benin massacre' takes place.
1914	the Benin monarchy was restored, although the majority of the power was in the hands of the colonial administration of Nigeria.
1960's	Benin City enters the oil age and a substantial number of international oil companies base themselves in the city.
1967	Benin Cityn became the capitol of the short-lived Republic of Benin. This republic was ended within a few months, only to become militarily occupied
1970's	An oil crisis hits Nigeria, deeply affecting Benin City with all of its oil establishments. Thousands lose their jobs.

The modern day city center of Benin is a hub for commerse, interaction and leisure. The main component is a traffic circle that is called King's Square. At one time this was a part of the Oba's Palace, but since the turn of the century the palace has shrunk drastically in size. King's square now functions a type of park- something that is very rare in Nigeria. Since this is the only public green space in the entire city, it's existanc eis important. The greenspace can be imagined as an island within the fabric of the city. Within the 'park' are the National Museum which contains most of the bronze artifacts still left in Benin, and other artifacts from the ancient empire. There is also an archeological site where an old fort exists, a lodge that can be rented out, a restaurant, and some other small buildings that are no longer used. Although there are no lines on the road, the traffic circle is at least four lanes wide and the term 'yeild' doesn't exist in Nigeria. Therefore, crossing to get into the park is difficult and dangerous.

The chosen project site faces King's Square and runs along Sapoba Road. At the opposite end, the site faces Igun Street and addresses the UNESCO bronze-casters. The 'back' of the site (away from Sapoba Road) abuts against the backs of several banks. The banks have in place high walls with barbed wire to deter theft.

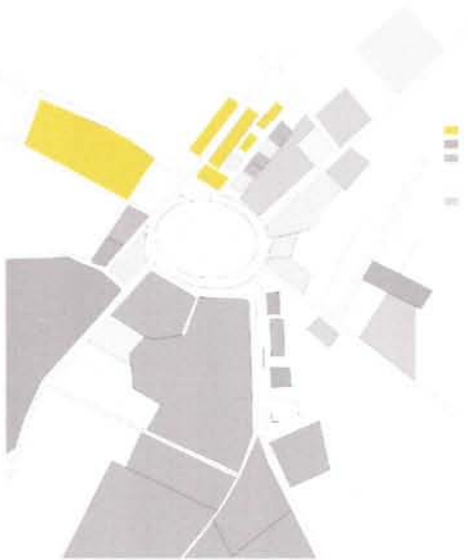
Igun Street is the street that was funded by UNESCO to honor the bronze casting heritage that has existed in Benin Kingdom for centuries. Market stalls run the length of the street on both sides and simple cabins built behind the stalls for neighborhoods in which many of the bronze-casters live. Several trees are currently growing as a buffer between the small scale neighborhood and the massive wall that serves as the boundary for the bank under construction on the site.



Site Within Context on City

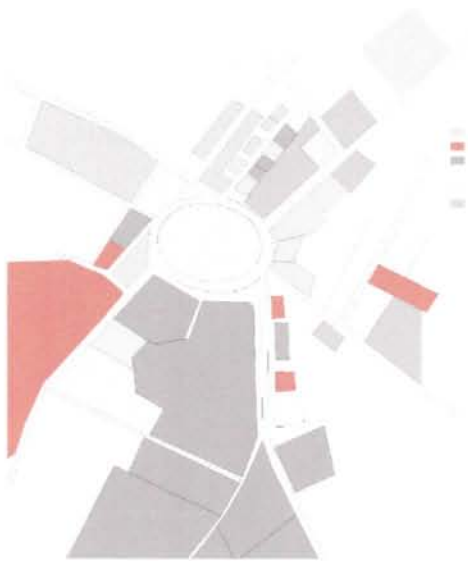
Banks:

New Nigeria Bank
Central Bank
First Bank
Sky Bank
Union Bank
Oceanic Bank
IGHOMO Community Bank Ltd.
First City Monument Bank
Western Union
African Continental Bank
AfriBank



Markets:

Oba market
bookstores
bookstores
clothing market
clothing market
clothing market



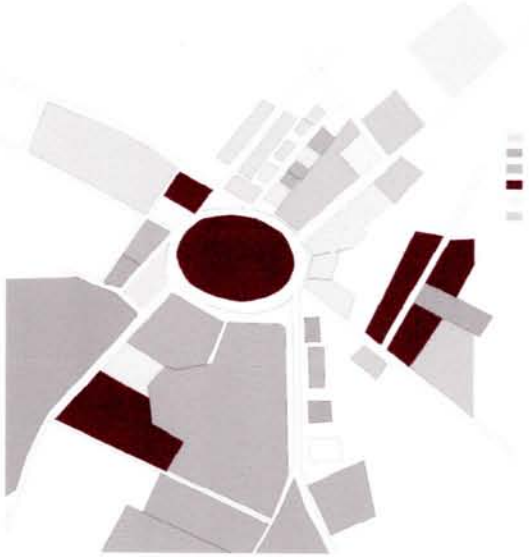
Oba/palace/religious:

Oba palace
sacred ground
sacred ground
Methodist church
Babtist church

Government Buildings:

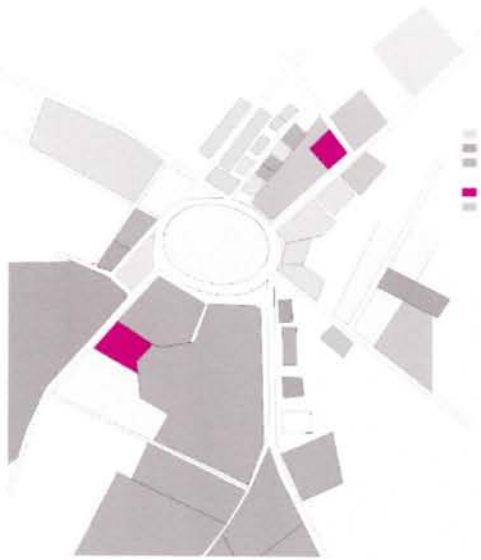
transport services
fire services
office building
office building
House of Assembly
hospital
government offices
high court
court of appeal
prison
prison headquarters

The programmatic pieces of King's Square represent a diversity of functions and each piece is replicated several times within a small radius. When analyzing the placement of each type, patterns begin to arise with different programs dominating various slices of the pie. For example, northwest is majority shops, while east is primarily banks.



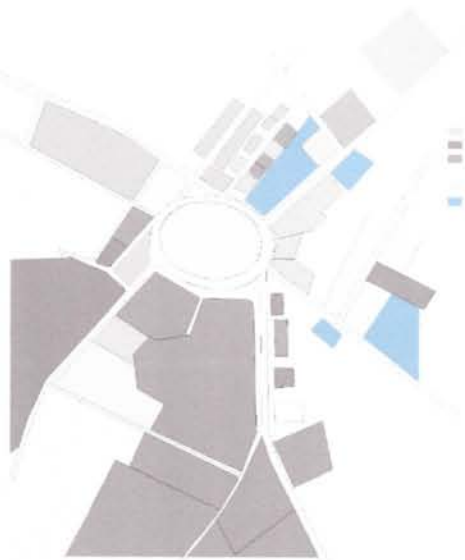
Craft/Cultural:

National Museum/public space
public ceremony hall
bronze casting
bronze casting
cultural complex



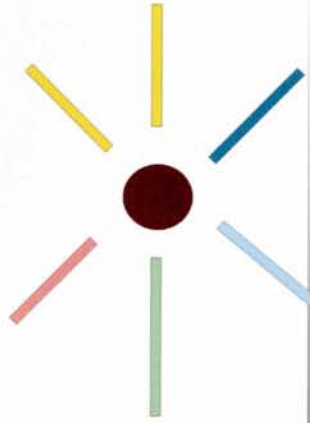
Post Office:

post office
post office

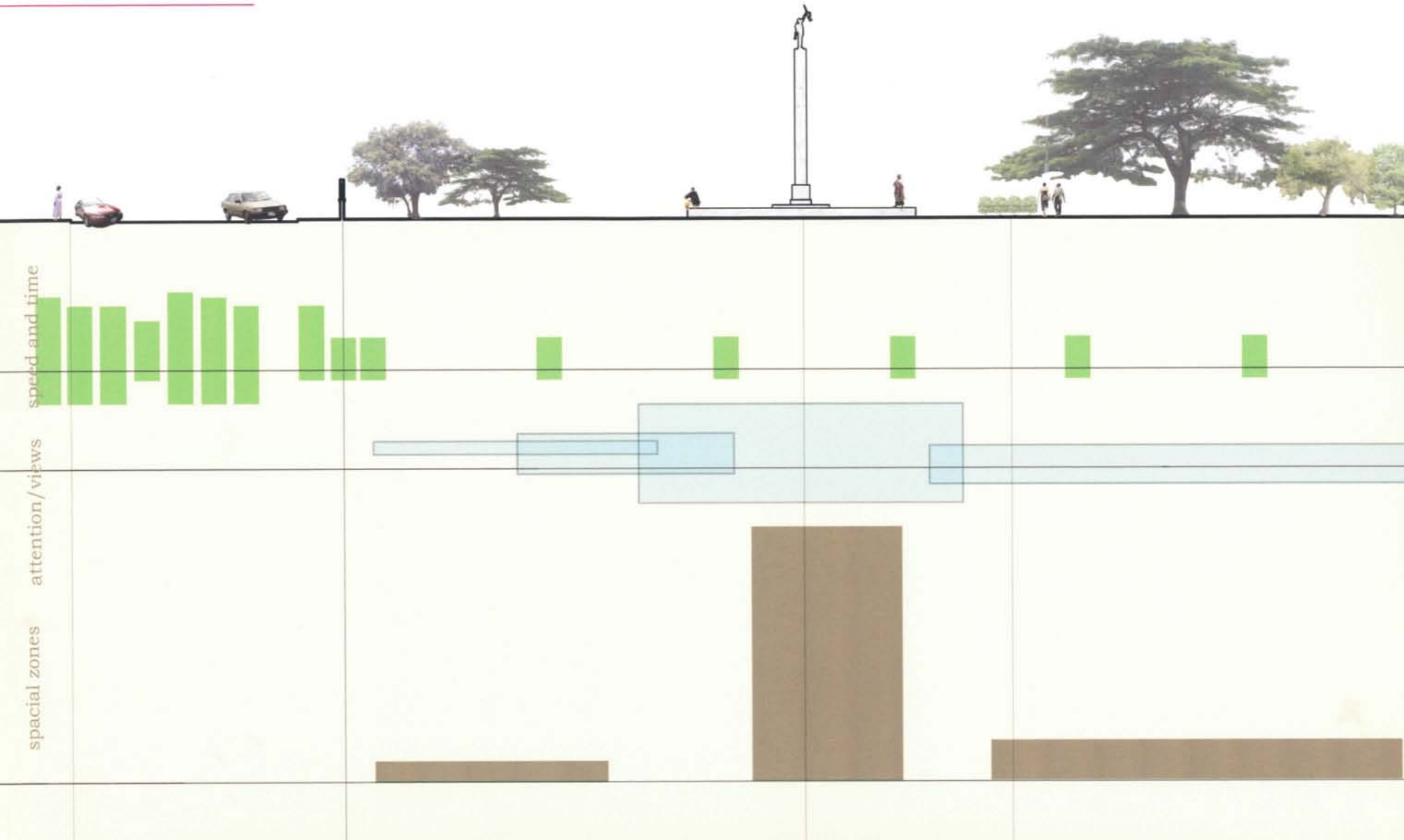


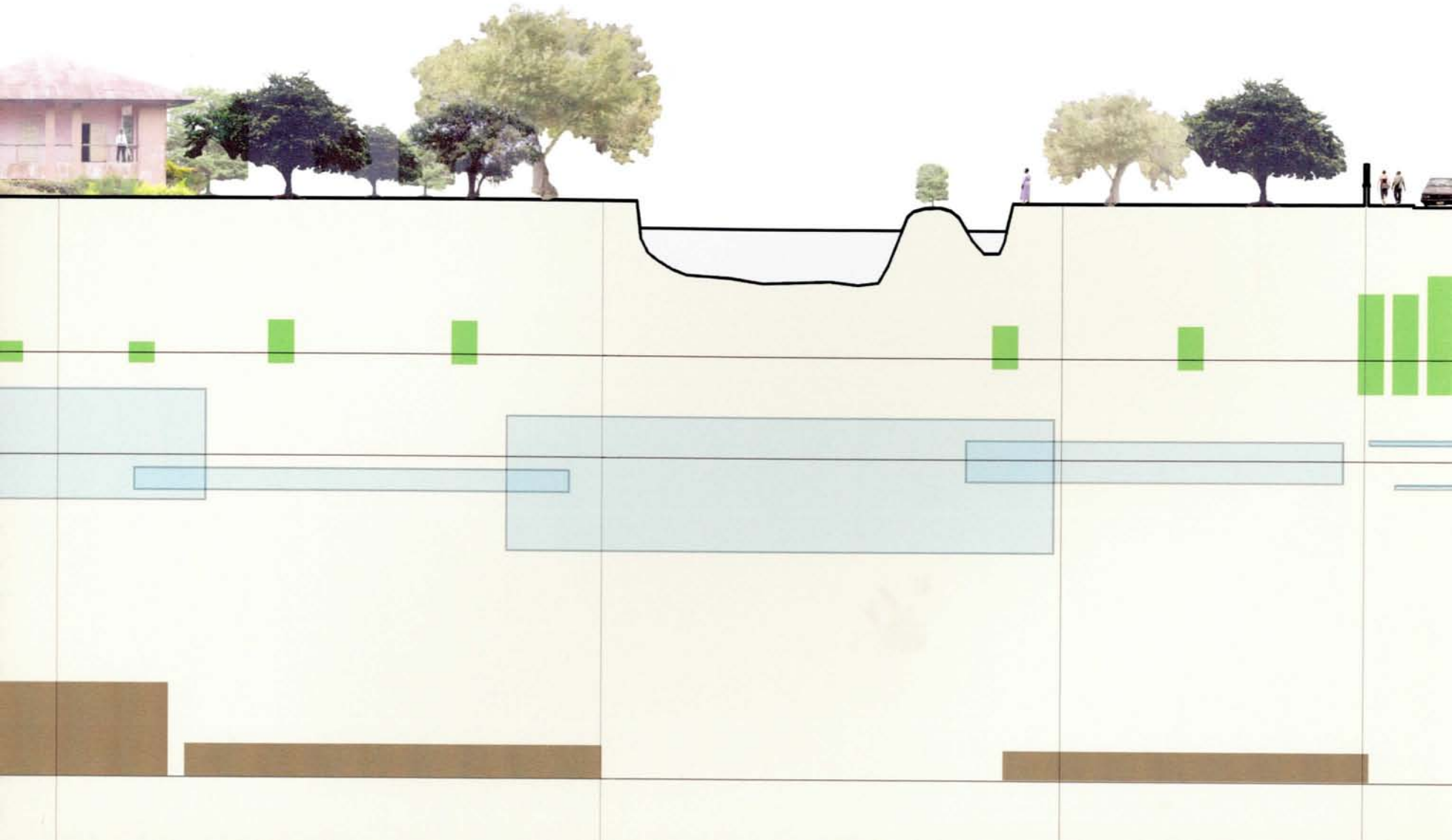
Private Company:

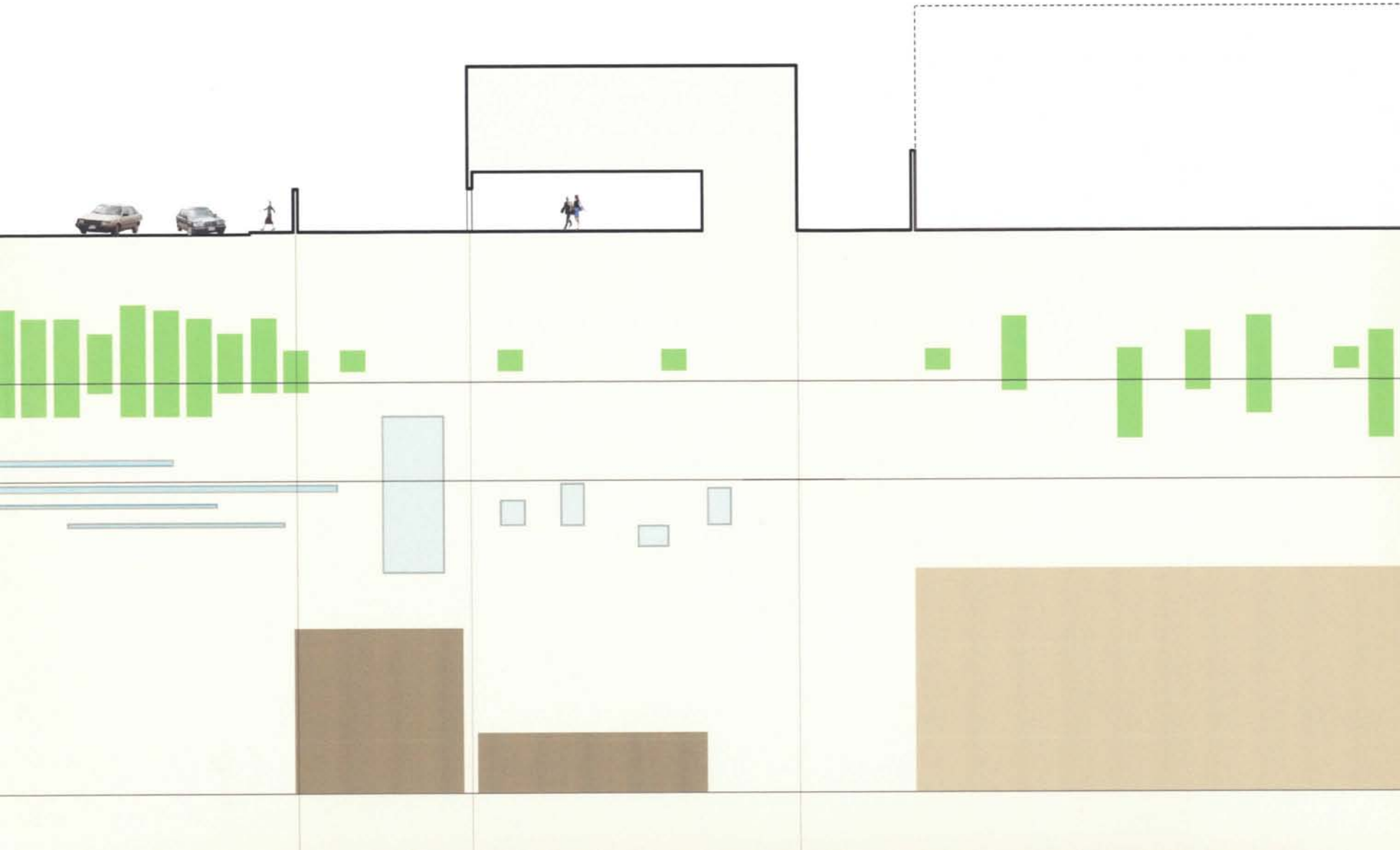
Nitel
Insurance Building
hotel
fast food chain

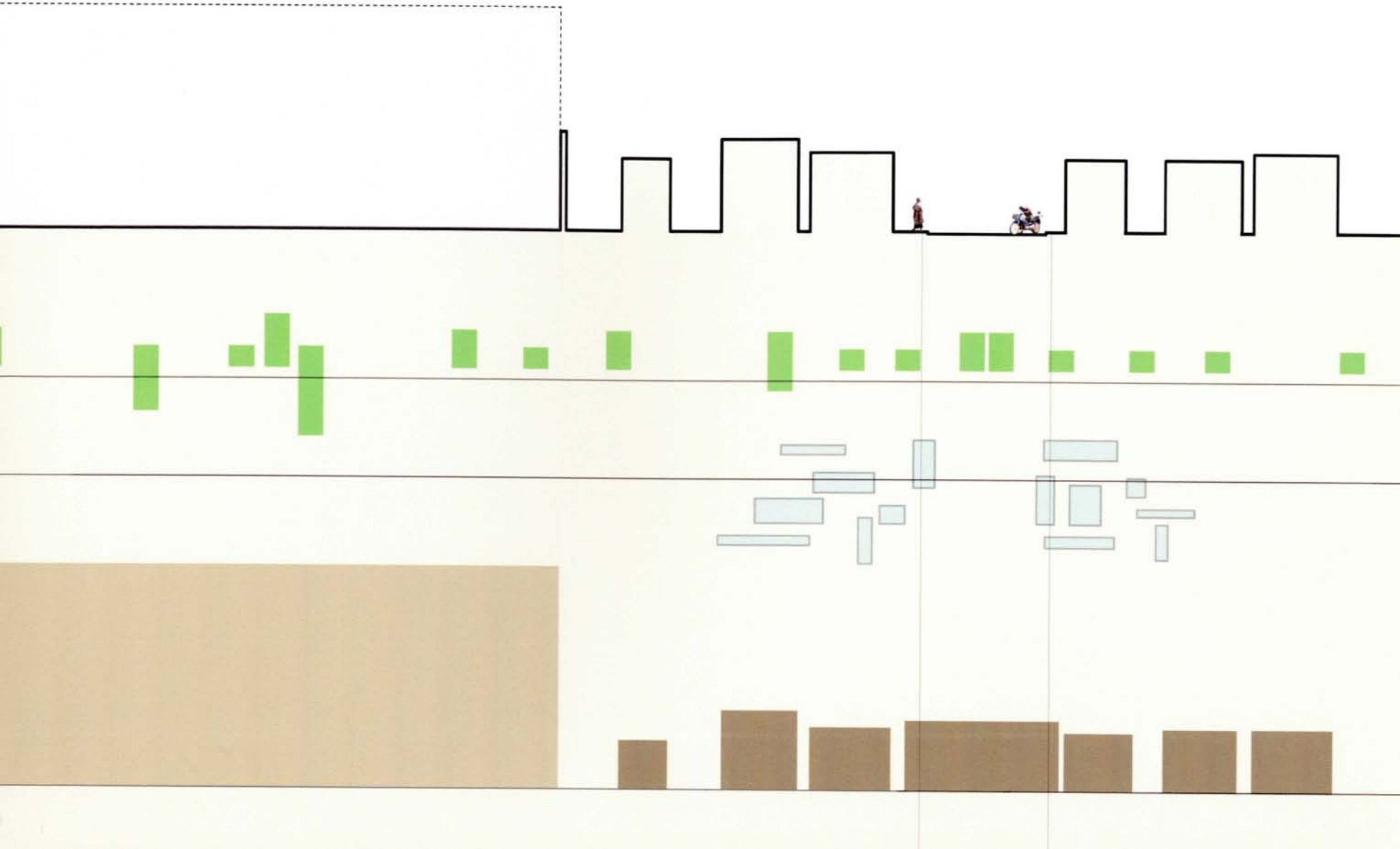


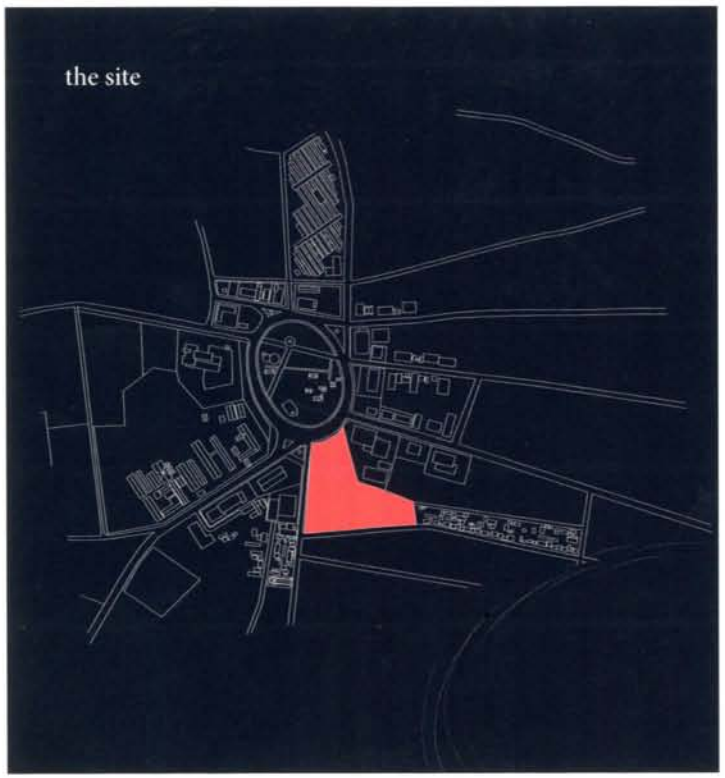
The Site Sequence

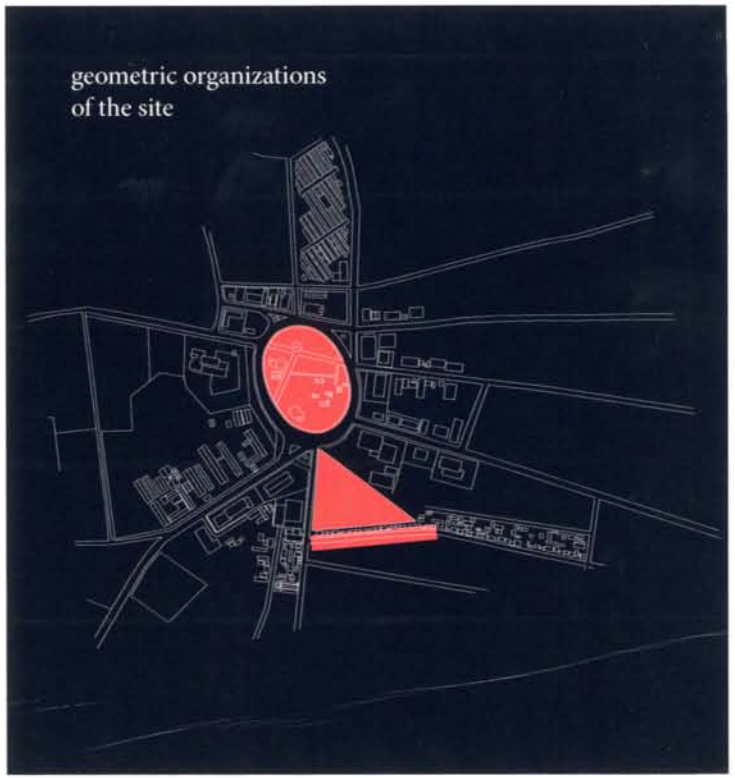








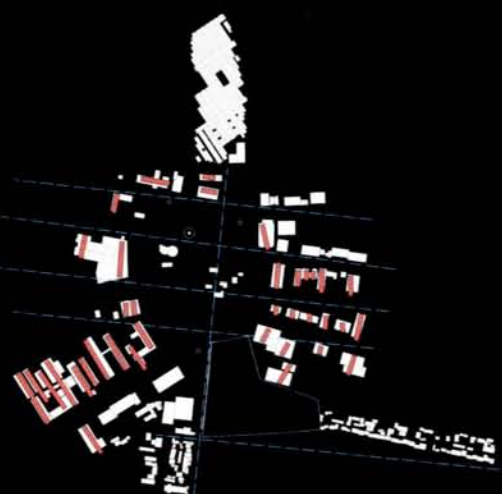

the site

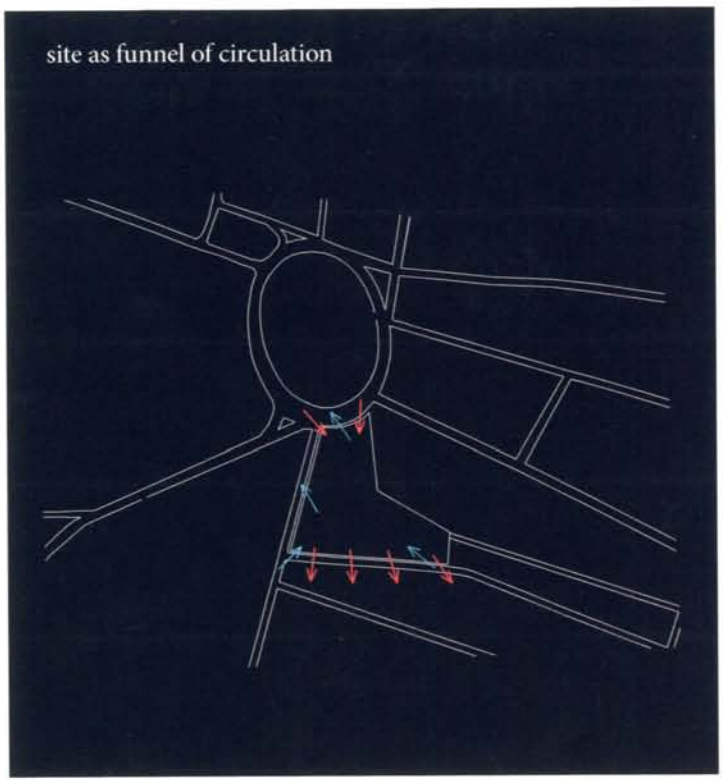

geometric organizations
of the site

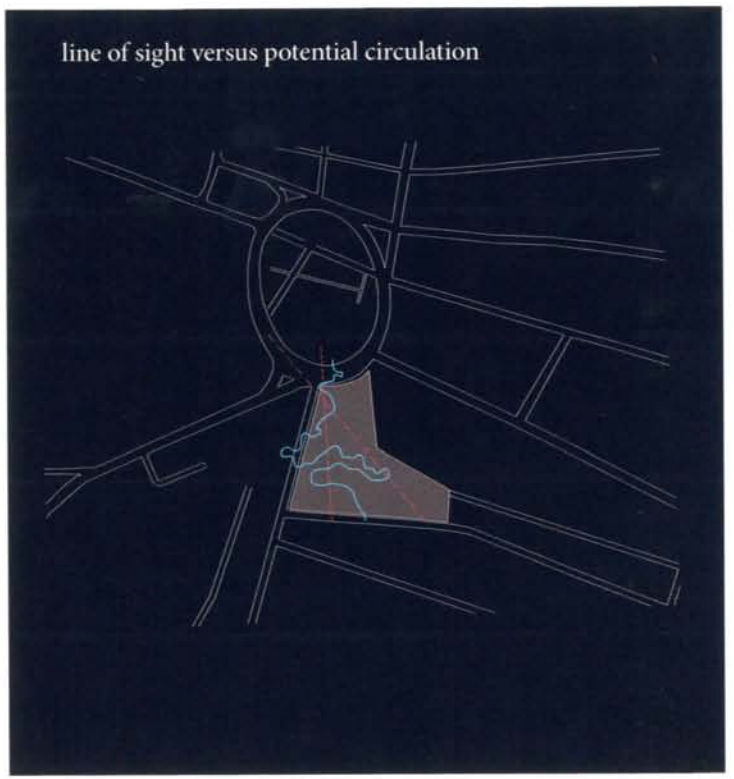
figure/ground

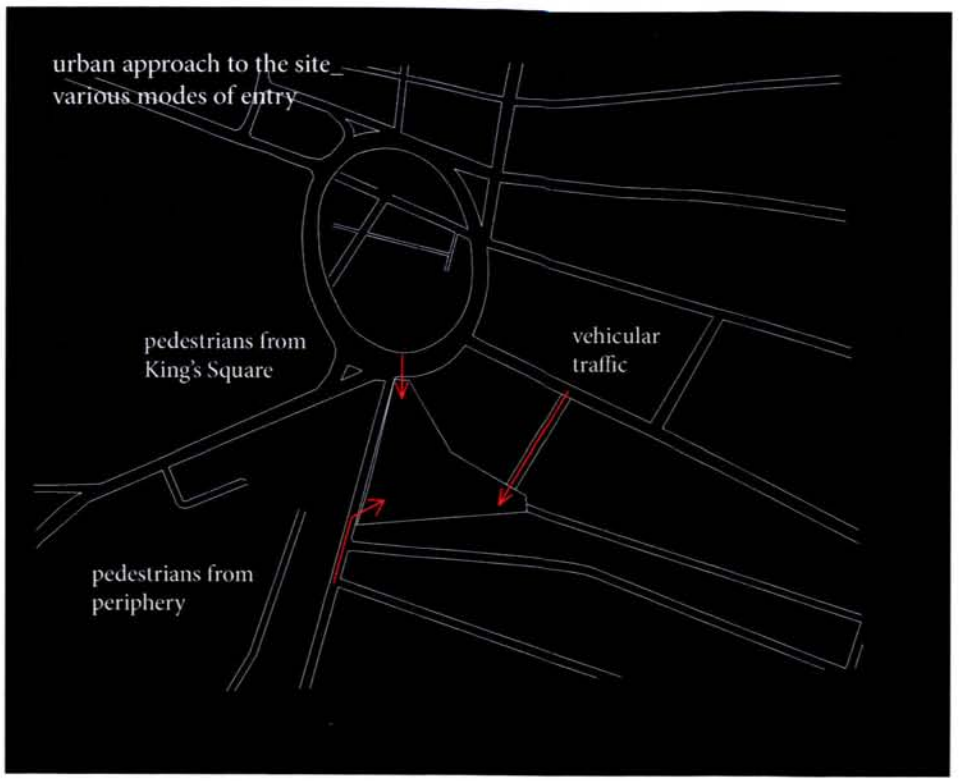
grid of streets

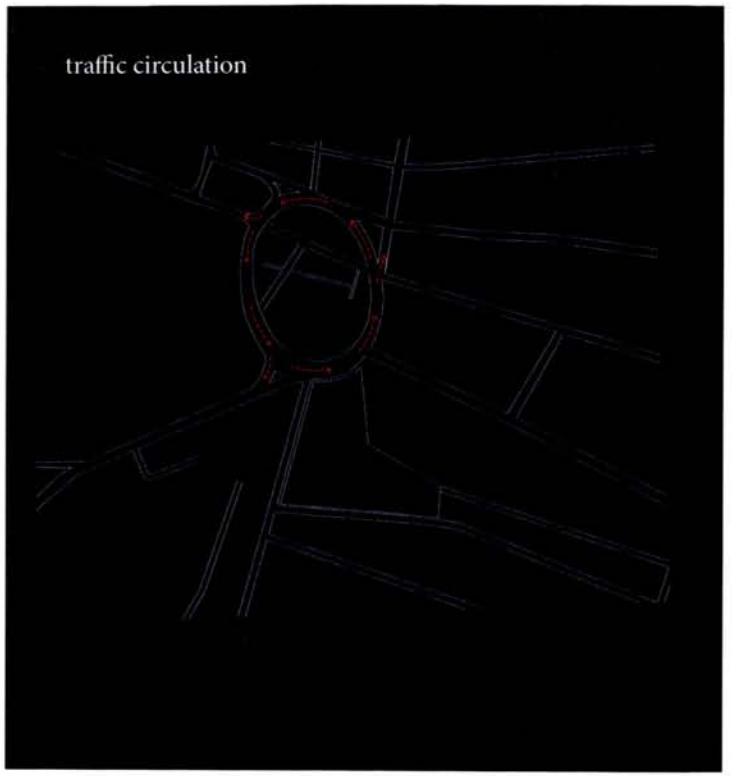
radial configuration of context

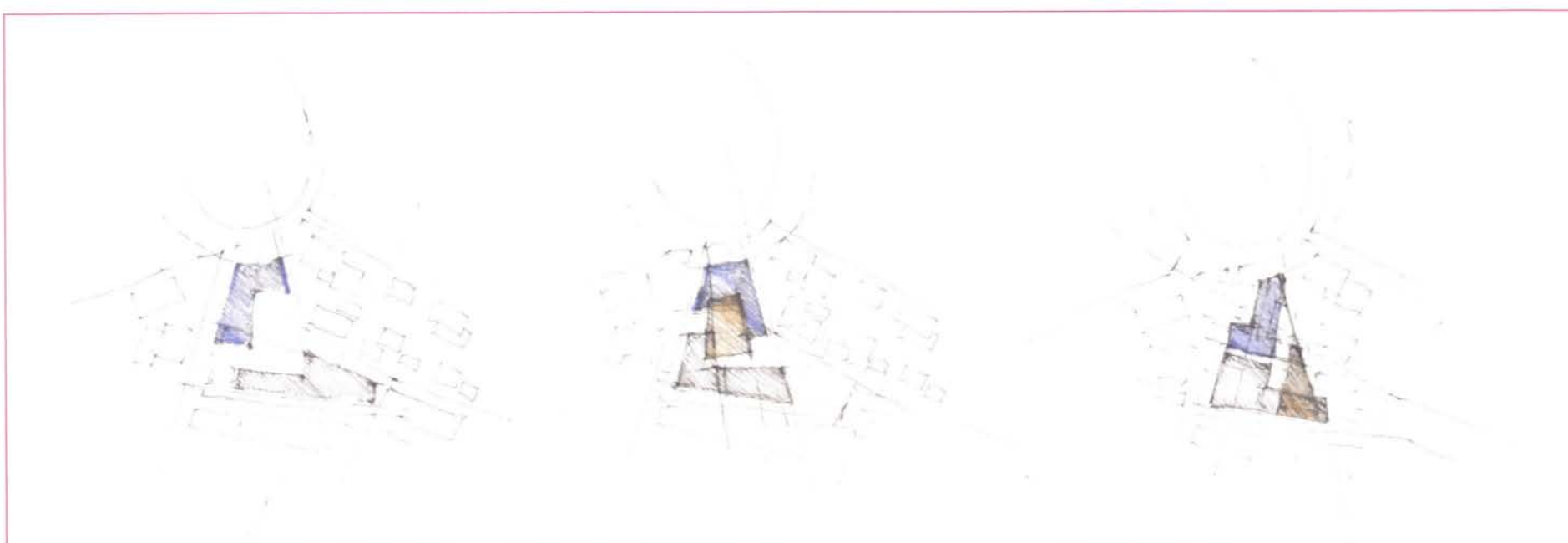



site as funnel of circulation

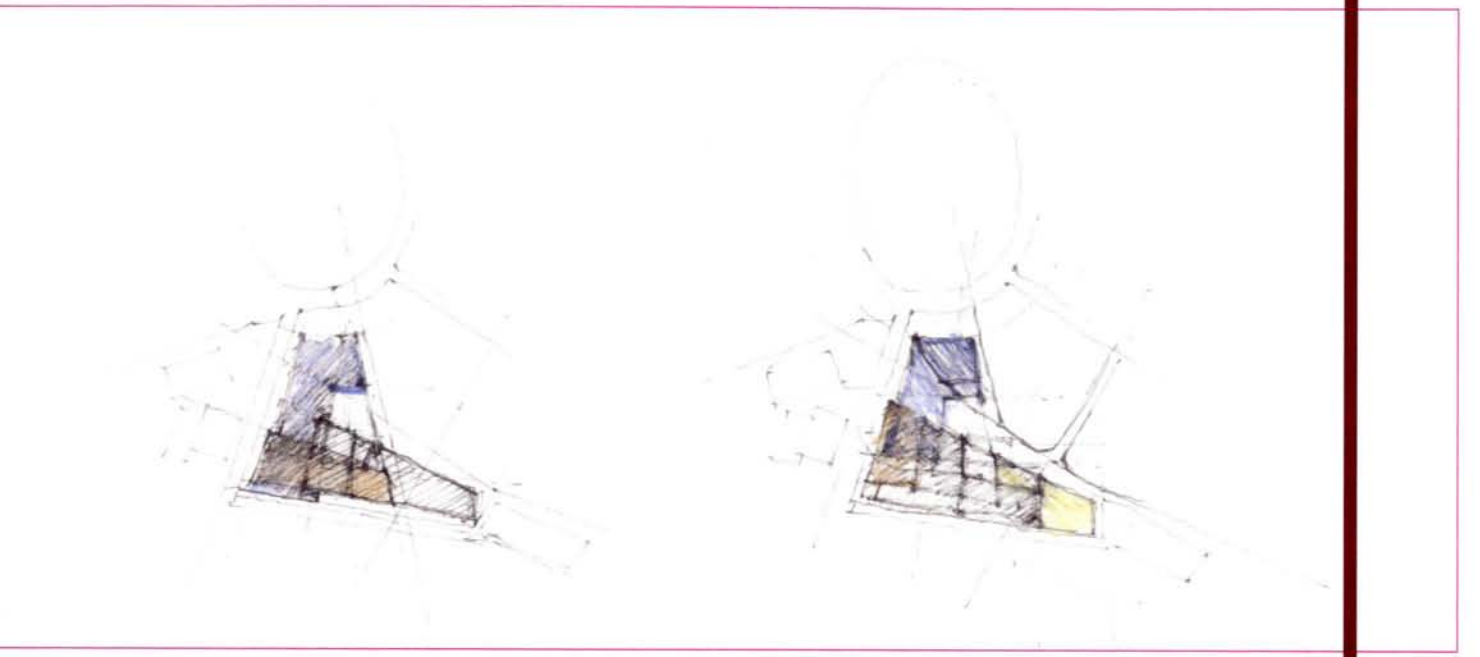

line of sight versus potential circulation

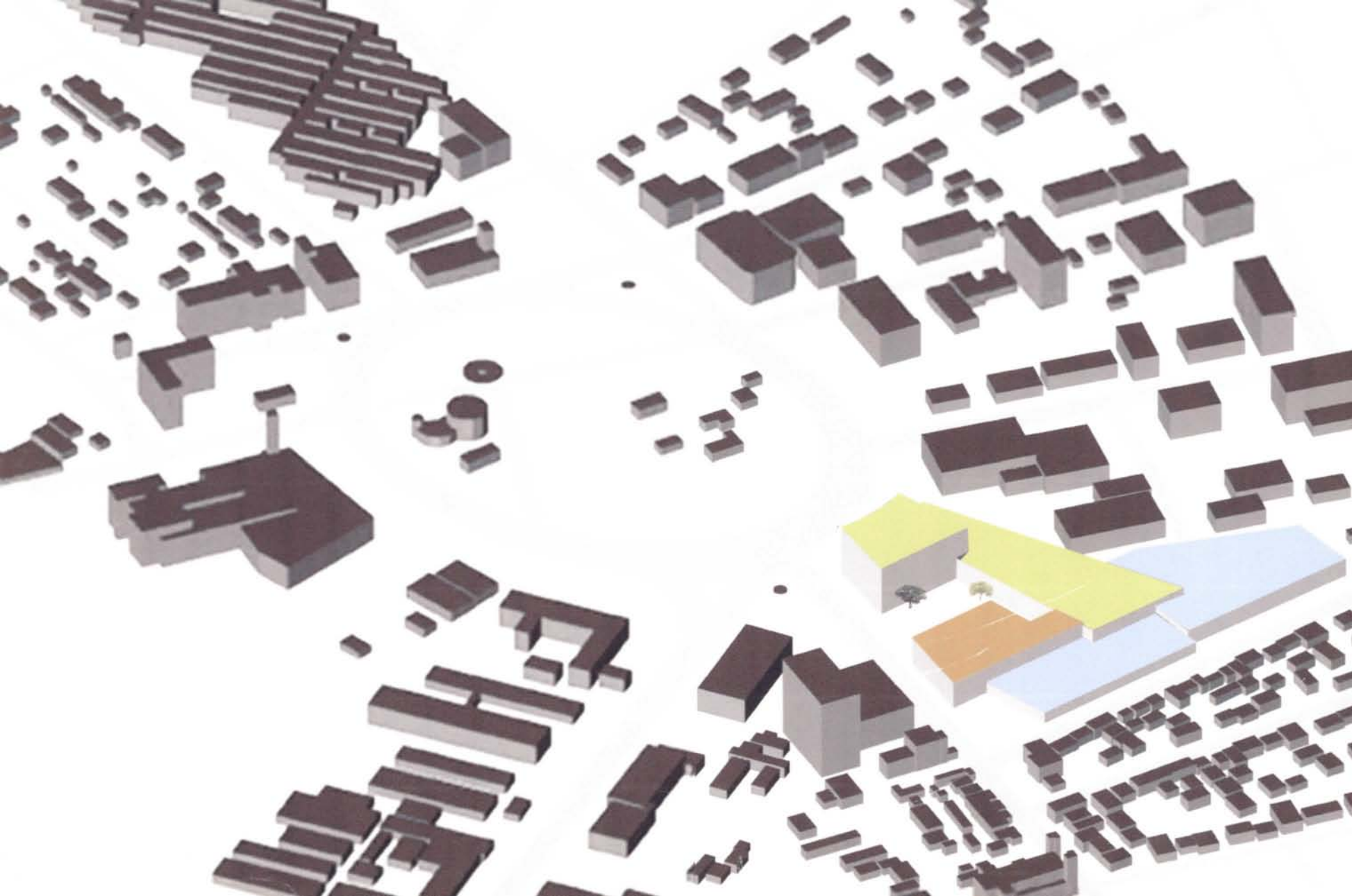

urban approach to the site_
various modes of entry
pedestrians from
King's Square
vehicular
traffic
pedestrians from
periphery

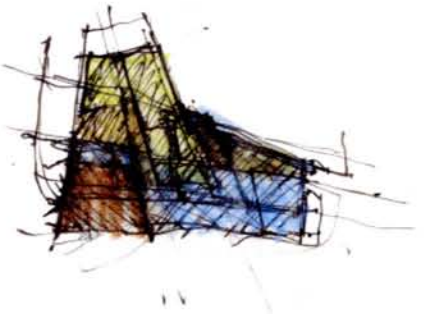

traffic circulation

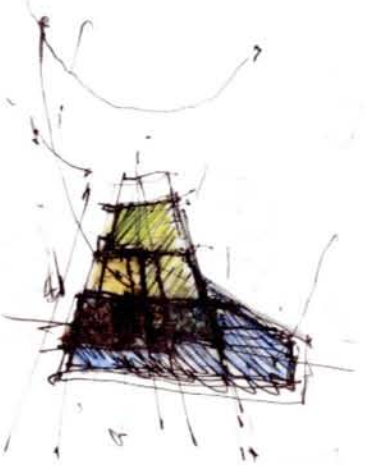


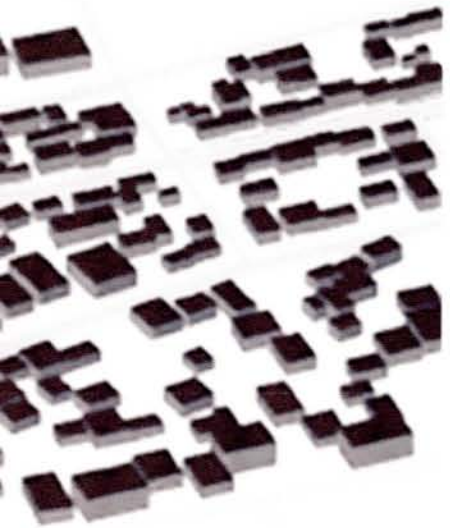
When testing out potential design proposals, the biggest challenges were working within the constraints of the odd shape of the site and working to satisfy both projects simultaneously.
However, the biggest problems also became the biggest joys when solutions were created that were agreed upon by both involved.











The technology is present but the architecture is not.







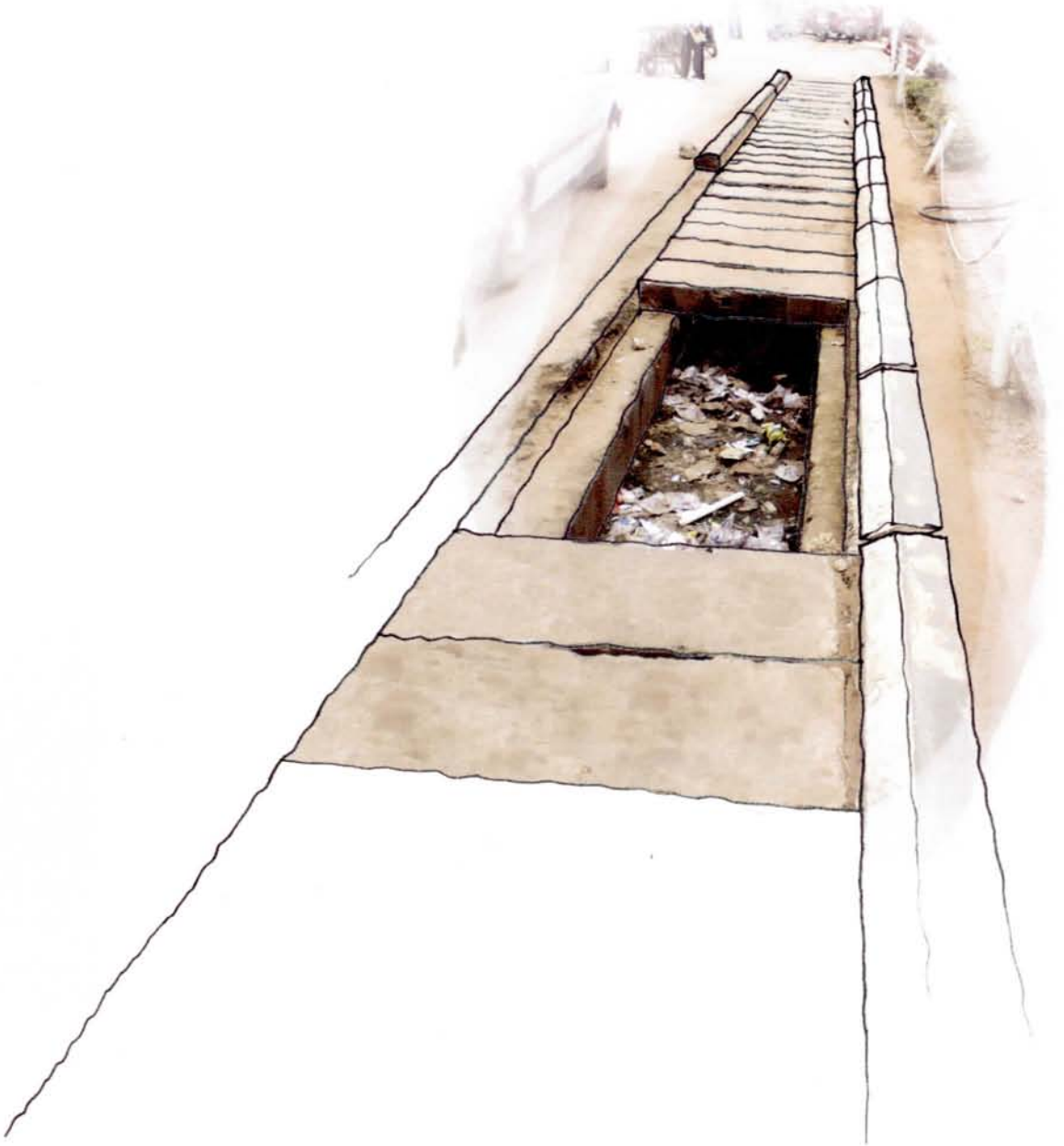
Birthday

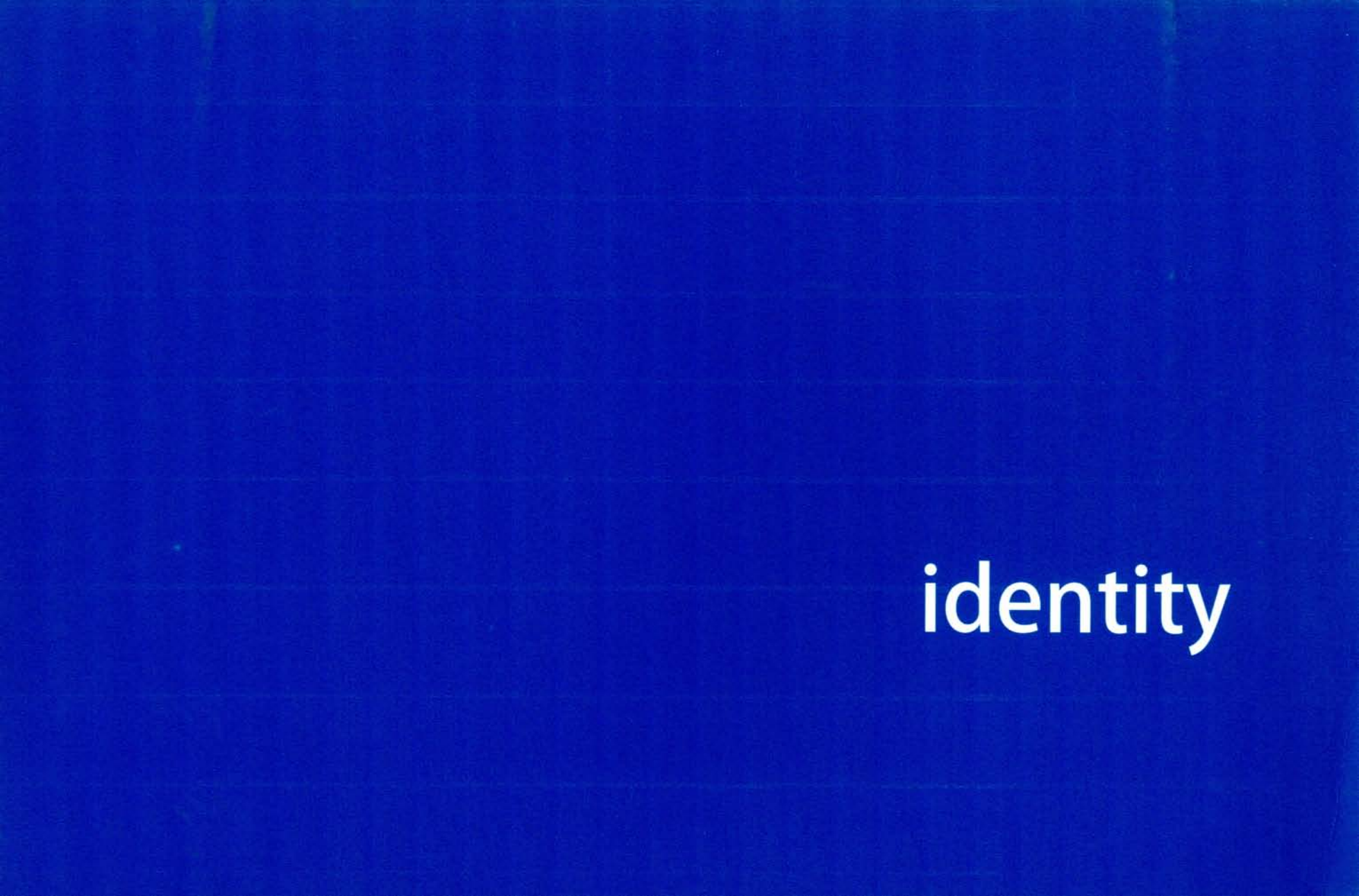



SONY

The spatial qualities of Benin City at the scale of the individual are very different from the Westernized perception a person's "comfort zone". There was rarely a moment when someone nearby wasn't invading my personal space in one way or another. Screeching, honking, crying, laughing, bribing, heckling and bartering, were all a part of the white noise (if you could call it that) that accompanied any outdoor experience. In this way, one's senses are overstimulated to the point where a single trip to the market can be exhausting. Even when retiring for the evening in the safety of the domestic setting, children (and there were tons of them!) were always around climbing, pulling, playing and fighting within the boundaries that I held sacred. The contents of my bags were constantly ransacked (in a search for food, toys and especially the biggest prize- the digital camera!) and a simple activity such as getting dressed was never done alone. The understanding of privacy (or lack thereof) was perhaps the biggest adjustment that I had to make.

In addition to always being conscious of the surrounding people, one also had to be alert for the material changes that take place within his or her personal space. One must be constantly aware of where to step next as well as what is happening at eye level. Pedestrians are everywhere, but little space is devoted to their safety and well-being. Besides the vehicular traffic which is fast-paced and reckless, and the shops which spill out onto the street anywhere, pedestrians must be attentive to open ditches that hold (and sometimes drain) the rainwater. Many times the drainage ditch is THE interface between a speeding car and the front porch of a building. Occasionally blocks are placed over the waste trench, but these are many times loose, damaged and unsafe to walk on. When it rains hard enough, these trenches flood forcing pedestrians to wade through refuse and filthy water mixed with sewage and oil.

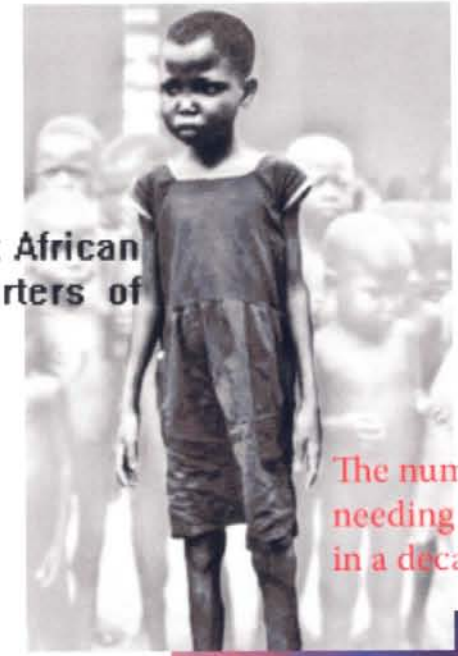



identity

Africa's food crisis

In Depth

With good governance, most African countries could be net exporters of agricultural produce
Darren, Lobatse, Botswana



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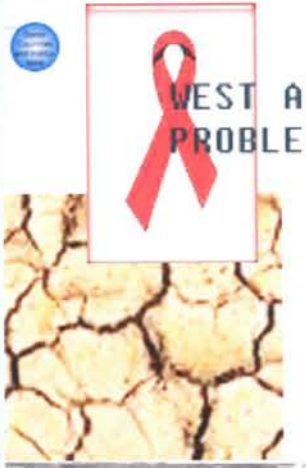
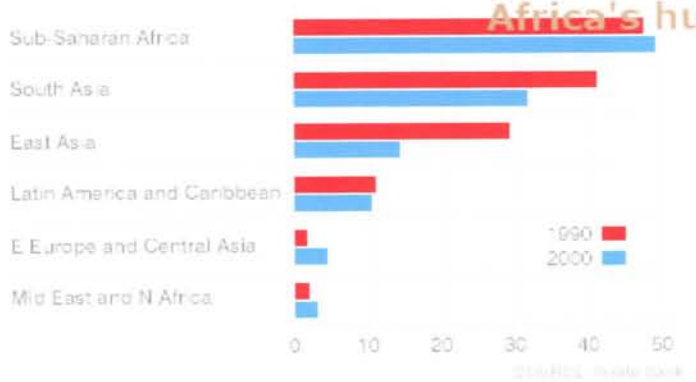
WEST AFRICA:
PROBLEMS OF CHANGE



BBC AFRICA ANALYST

Proportion of people on less than $1/day (%)

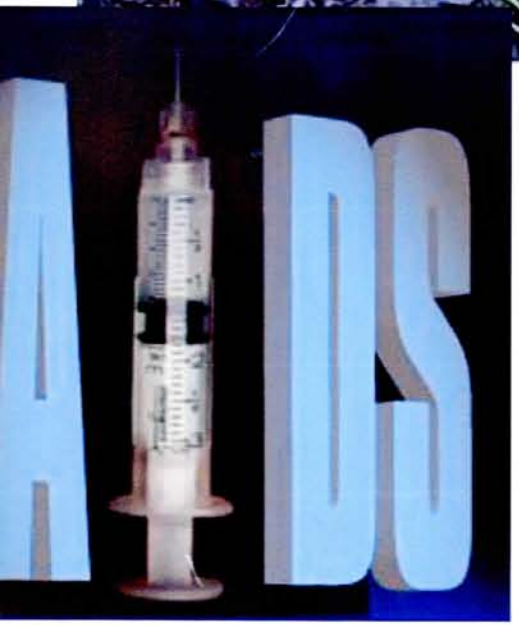


Africa's hunger - a systemic crisis

AID

"Sub-Saharan Africa 's population has grown faster than any region over the past 30 years, despite the millions of deaths from the Aids pandemic," the UN Population Fund says.

CORRUPTION



When most people think of Africa, there are two things that come to mind. The first is that of exotic safaris and wild adventures. The second thing people think of are the problems. The main representation of the continent is limited to the world news on the radio or television discussing the war, voilence, fraud, strarvation, drought and famine, disease and illness that occur there. The other foremost appearance Africa has in mainstream Western culture is on commercials advertising non-profit organizations such as Christian's Children Fund or UNICEF.

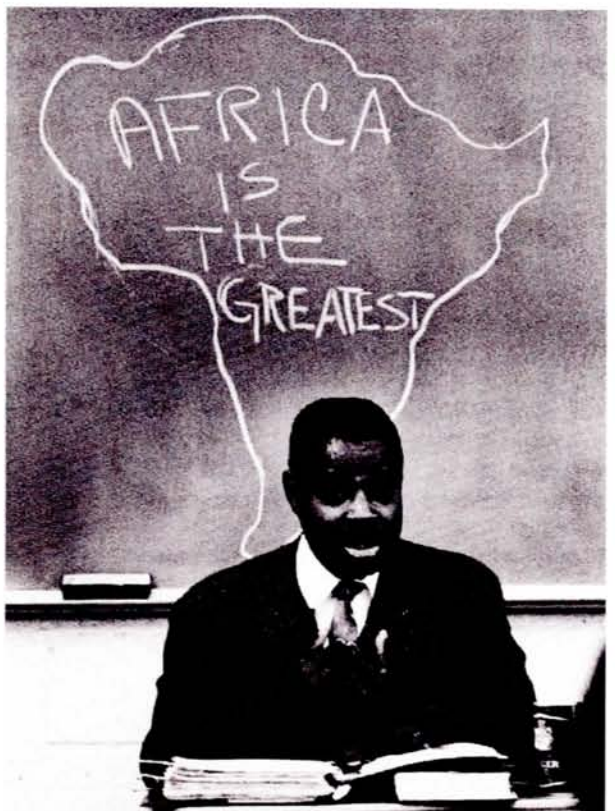
Celebrities such as Angelina Jolie have popularized contributions to relief efforts and the concept of Africa as a destination for non-profit has become almost a trend among celebrities and in the fashion world. This is definitely important for world awareness, but there is much more to take in than simple the problems. The idea of considering the whole picture becomes important in architecture too. One cannot let the hardships of the region become such a burden that they are distracting to the project.

Understanding one's won identity requires understanding the context of that person and their own sense of place. The interest here is to try an appreciate and explain the individual personality of an area. The seemingly obvious way to achieve this is to acknowledge the differences between life in the United States and the Nigerian lifestyle. This can be broken down into three variations of thought.

The 'empirical significance of place' focuses on existing variations in economy, society and culture between these two places. It is this term that is the focus of the project. Location is not after all just something we encounter and deal with; it is a part of us. Life changes are essentially affected by the imposition of location.
'Where we are is a part of who we are'

The 'normative significance of place' seats importance on keeping things local. This is the idea of self-sustainable communities. An example is upstate New York agriculture sold in New York for a reduction in "food miles". This will be applied to the project in regards to material choices. In an effort to promote environmentally friendly design, limitations will be implemented to the selection of regional available materials with an emphasis on creativity of usage. By doing so, the building becomes a billboard for environmental change, while publicly supporting local resource venders. This method could be defined as a kit of parts which must consist of found objects in the region of the Benin Kingdom.

The 'epistemological significance of place' is a skepticism towards general theories that claim equal applicability everywhere. This is especially pertinent in architectural theories. Imported architectures can be completely alien and imposing to the endemic vernacular. Too many of these can lead to a loss of meaning and individuality of the present architecture of the region.



While in Nigeria, it was brought to my attention that the people branded themselves in a variety of classifications. When asked to define what they were, people from the same location identified themselves as Edo, African, of the Benin Kingdom, from Benin City, Nigerian and Bendel. In fact, all of these answers are correct for just about everyone. Pride.

Nationalism began at the point in history where European powers threatened the suzerainty of the traditional rulers. Although European countries faced various levels of resistance from societies all over Africa, in no place on the continent was alien rule desired from the beginning. The opposition of African rulers and peoples to the threat by alien rule should be regarded as a factor in the rise, and a part of the nationalism in Africa.

The resistance to conformity that was brought about by the nationalist movement led to importance of the preservation of traditional customs. In Kenya, national "independent" resistance schools were established in the 1920s to protest against denunciations of clitorischodemy by Scottish missionaries, while in South Africa many of the African churches incorporated part of traditional religion into their Christian worship. In West Africa some of the African churches accorded full recognition to polygamy and indigenous secret societies were revived to compete with the influx of European Christian presence. Even in French colonial Africa, where the so-called policy of Assimilation captured the imagination of many people, African customs and institutions remained strong (Anene, 19). By 1946, the culture of Africa came to be appreciated through the philosophy known as Negritude.

Pan-Africanism is a term that emphasizes the autonomy and unity of the African continent. This concept binds all African people and African states together at one level. By it, the African people and states emphasize the characteristics that unite them and tend to ignore those things that divide them. It specifically refers to Black Africans, bringing pride and respect to those with dark pigmented skin, and excludes those Africans who have immigrated to the continent from Europe, India or any other country. Pan-Africanism stands for the dignity of Africa and of Africans on the world stage; it rejects the idea that Africans are in any way inherently inferior to other races and it fosters race consciousness.

Popular pan-African slogans include "Africa for the Africans" and "African Personality".

The beautiful bronze and brass that Benin is known for were religious objects made for the Oba. The bronze-casters worked exclusively for the Oba and took direct orders from him as to what to make. The finished pieces were used on shrines and in religious ceremonies.

The old palace was full of these treasures and when the palace was ransacked in the 1897, many of the pieces were stolen and are now shelved in museums all over the world.

The process of making them was seen as magical. The process, known as the 'lost wax' method goes as follows: The worker first made a model in thick clay expressing his idea, very roughly. Having dried it thoroughly in the sun, he covered it all over with a thick coat of beeswax, taking care to see that every layer was equally thick all over. The he carved the head, or the figure, or the plaque, or whatever he was designing in the wax. When he was satisfied with it he added a little cup-shaped piece at the top; this having nothing to do with the design. He then painted it all over with several very thin layers of clay and water letting each one dry before adding the next. Finally, he put on a thick coat of course clay to protect the whole.

The next step was to turn the entire piece upside down and heated it until all the wax melted and ran out, leaving empty channels. Turning it right side up again, he poured in metal that had been heated in a crucible to a temperature of about 1500 degrees centigrade in through the little cup that he had left for this purpose. The hot metal flowed over the statue or






design and as it cooled, it set hard in the perfect likeness of the wax carving. When it was cold and hard, the worker broke open the clay covering, stripped it off with the cup and, revealed a beautiful work of art.

Among the many state festivals there was one in which the Oba paid homage to his dead father. It took place before a special alter dedicated to the late king. It was a semi-circular platform about two feet high made of hardened clay. On it there was a bronze centerpiece in which the figure in the middle was always a likeness of the Oba to whom the alter was dedicated. It had to be cast during the funeral ceremonies on apiece of ground that would never again be used. It was the duty of the new Oba to pour into the mold the first crucible of molten metal.

In Benin, coral was sacred, as well as being a sign of rank. No chief could wear it unless the Oba had given him the right to do so. It was worn around the neck in long strings often reaching to the hips. The number of such necklaces depended on the status of the wearer. When the chief wearing them died, they had to be returned to the Oba. If anyone lost his coral, he was executed. So was the thief, if discovered, and anyone else proved to have known about the thief and not given information.

When British forces entered Benin City in 1897 they were surprised to find large quantities of cast brass objects. The technological sophistication and overwhelming naturalism of these pieces contradicted many 19th-century Western assumptions about Africa in general and Benin – regarded as the home of 'fetish' and human sacrifice – in particular. Explanations were swiftly generated to cover the epistemological embarrassment. The objects must, it was supposed, have been made by the Portuguese, the Ancient Egyptians, even the lost tribe of Israel. Subsequent research has tended to stress the indigenous origins of West African metallurgy. Yet it was the naturalism that proved decisive. Their status was marked by the establishment of the term 'Benin bronzes', despite their being largely of brass.

Following the bloody British punitive expedition to Nigeria, about three thousand brass, ivory and wooden objects were consigned to the Western world. At that time, western scholars and artists were stunned by the quality and magnificence of these objects, more than 1,000 brass plaques were appropriated from the oba's palace. Dating from the 16th and 17th centuries, these plaques were secreted in a storage room. It is thought that they were nailed to palace walls and pillars as a form of decoration or as references to protocol. They show the oba in full regalia along with his nobility, warriors and Portuguese traders. The most elaborate ones display a procession of up to nine people, while others depict only fish or birds.

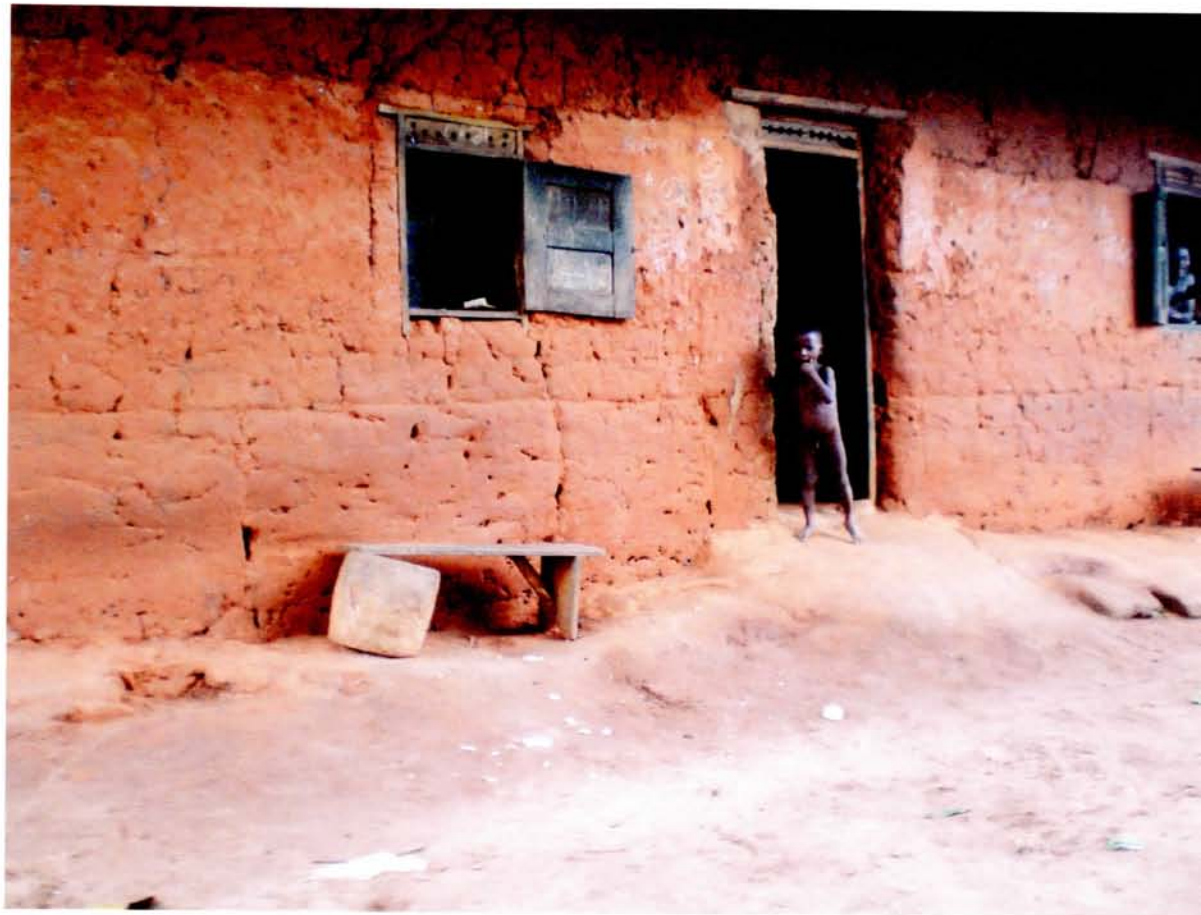
african architecture

When considering traditional African architecture, many Westerners conjure up an image of primitive, ineffective, huts which only illustrate their inferiority to European or American architectures. In fact, even when I informed a non-architectural friend of mine that I was doing my project in Africa, the sarcastic response was, "Are you going to do a building out of dirt or something?" It is the intention of this chapter to portray the building typologies as more than just simply mud edifice. With an architectural background, we have the ability to appreciate a variety of building techniques and the effectiveness of traditional methods, but still the Western education does not include most African or Asian architectural studies unless they are projects by architects such as Le Corbusier. There is a real beauty in the simplicity and organic nature of the indigenous clay homes that are still present in Nigerian villages today. Because of the tropical weather, they are completely effective in climate control and create a comfortable, pleasant environment. Before describing them in further detail, emphasis should be placed on the splendor of the art form which deserves reverence and admiration.

Traditional building construction in Africa was usually a communal effort, with many family members helping to erect the home. Thatching was usually done by the women, while the men built up the walls. The mud used is a high-quality form of clay. The

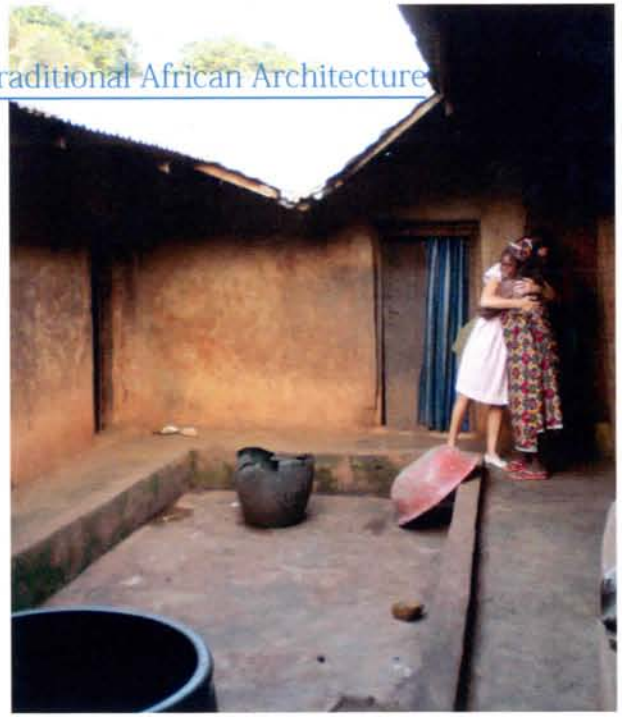
"The true basis for the most serious study of the art of architecture lies with those more humble indigenous buildings everywhere...Fuctions are truthfully conceived and rendered invariably with natural feeling. Results are often beautiful and always instinctive."

_Frank Lloyd Wright



silt content of the soil is low and so there are subtle variations in the proportions of sand and clay. This is a disadvantage for agriculture, but it is an ideal ratio for building. Sand is the most grainy of the three (sand, silt and clay) and clay is the most fine. Therefore the mud works like cement with the clay being sticky to hold it together and the sand providing strength. The durability of these is surprisingly high and mud buildings have the capacity of being built two stories.

Different procedures are practiced to achieve the structure. Sometimes bricks are made first,



(sometimes using molds, but many times not) and in forest areas a technique known as 'swish puddling' is exercised. This is usually done in the middle of the wet season. A pit as dug and the topsoil is discarded. The red clay underneath is broken into clods and after they are softened by rain, they are 'puddled' by stomping. When ready, the clay is left in a heap covered with banana leaves until the dry season when construction can begin.

The surface of the mud building exposed to the weather should be properly maintained to remain durable. This usually consists of frequent plastering. Plaster can be made of mud and straw and is generally applied by hand. Relief mud decoration is popular in Benin and the level of detail ranges from simply pressing a natural object into the clay to elaborate ornamentation on the facades.

Courtyard houses are constructed all over the world, but a special variation of this is the impluvial style where the courtyards are used as a water collection tank. The mean annual rainfall in Benin is 2000mm, but during the dry season there is very little surface water due to the porosity of the sandy soil. Without the collection of rainwater, no long-term large settlement could sustain in this area. The other advantage of water collection is that it helps to alleviate the erosion that occurs from rainwater runoff. Yet a third positive is that the impluvial courtyard naturally ventilates the house.

In some places in West Africa, town walls were built with mud, and many reached colossal proportions. The government and/or citizens of the town tried to predict the course of future attacks and strengthen specific parts of the walls accordingly. Walls were built of puddled mud which was sometimes mixed with stone and at

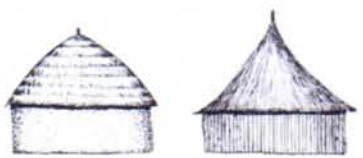
times mixed with oil instead of water. Two to three walls were usually built around the town with building techniques similar to that of the house construction. Trenches sometimes accompanied the walls and in forested areas, forests were left undisturbed around the walls to prevent cavalry attacks and to serve as a place of refuge in case of defeat. The citizens planted thorn bushes in the trenches and in the rainy season, they filled to become moats. The ditches were typically 4 to 5 meters wide at the base, and tapered as they reached the surface. Additional fortification in West Africa was used in the form of stockades of hardwood. Within the jungle environment, these stockades built outside the city walls, became trellises with which thick vines and other vegetation take hold. (Denyer, 71)

Benin City is known for its ancient moat whose vast depths and lengths took several years to complete and which encompasses the entire old city. New construction, garbage and a general lack of interest by the community has left the moat in disarray, but its remnants are still visible and street signs indicate when a road passes over the historic construction.

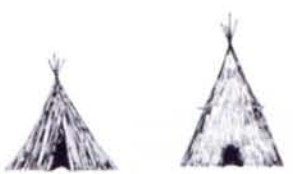
The palace of Benin Kingdom was first visited by the Portuguese in 1472 and between then and its sacking by the British in 1897 many varying and spectacular descriptions of it have been published. Many writers commented on the size of the palace and Burton was quoted in 1904 to say that it was supposed to accommodate fifteen thousand people. The buildings of the palace were of similar construction to the houses of the townspeople and included a long gallery resting on fifty-eight square pillars which were covered in bronze plaques.

Throughout Nigeria:
Rectangular plan, free-standing; hipped roof; thatch of palm leaf mats sometimes with two long sides lapped over other two; walls of wattle and mud; sometimes with carved wooded door posts sometimes on stilts

Fulani:
Round plan, free-standing; diameter equal to or greater than height; walls of mud and/or wattle, bamboo or palm fronds; thatched conical roof (convex or concave profile); often with verandah full or part way round; arranged in clusters of buildings within surrounding fence, hedge or wall.



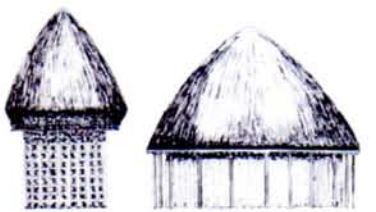
Ijo, Yako, Oratto Ibo:
Rectangular plan, sometimes free standing, thatched saddleback or lean-to roof; walls of planks, bamboo, cane, matting or cane and matting; walls sometimes plastered internally; roof thatch of palm mats, reeds, bark, palm fronds, sometimes on stilts.

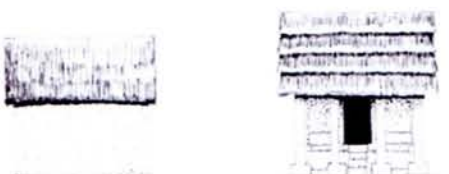


Fulani dry-season houses (northern Nigeria): round plan, free standing; conical roof and no walls; framework of straight sticks (guinea corn stalks, bamboo); sometimes thatched. *see along the roadway while driving from Lagos to Benin City*

Fulani:
Round plan, free-standing; diameter equal to or greater than height; walls of mud and/or wattle, bamboo or palm fronds; thatched conical roof (convex or concave profile); often with verandah full or part way round; arranged in clusters of buildings within surrounding fence, hedge or wall.

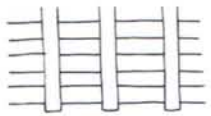
Abuja, Ibo:
Square plan, free-standing; conical roof; walls of mud or mud and palm fronds; thatched roof of grass or reeds



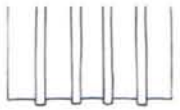


Ibo, some rural Hausa
Rectangular plan, free-standing; thatched saddleback roof; buildings often arranged facing across a small court with some of the sides court open or pillared; walls puddled mud or wattle framework plastered over; releif murals common form of decoration.

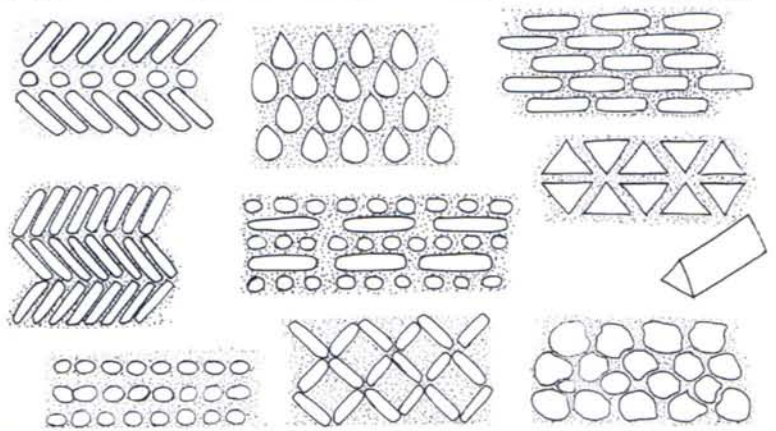
Bini, Yoruba, Ekoi
Rectangular plan, thatched saddleback roof; units built around court or impluvium having continuous roof; walls of puddled mud or mud and wattle; sides facing court or impluvium sometimes open or pillared.



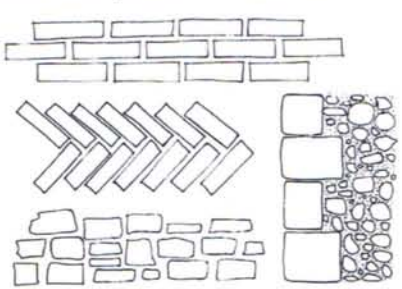
Cleft planks, arranged vertically or horizontally, between upright poles. Horizontal planks sometimes lapped.



Puddled mud laid in courses. Roof supports sometimes embedded in walls.

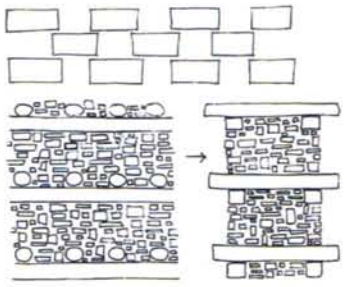


Roughly dressed stones or sundried bricks, either rectanguloid or pear shaped, embedded in mud mortar. Often plastered over on both sides.

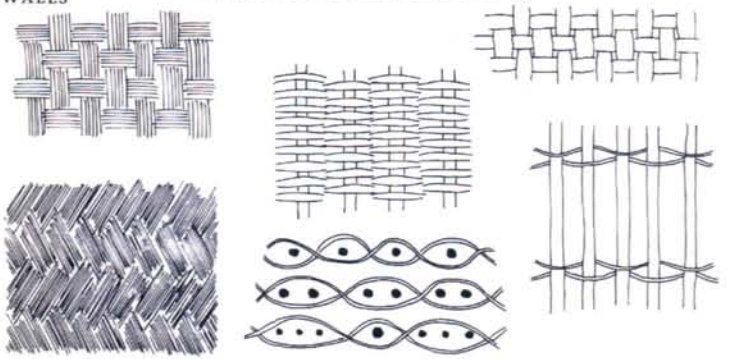


Dressed stone blocks, dry set, used as facing over rubbles core or for whole wall.

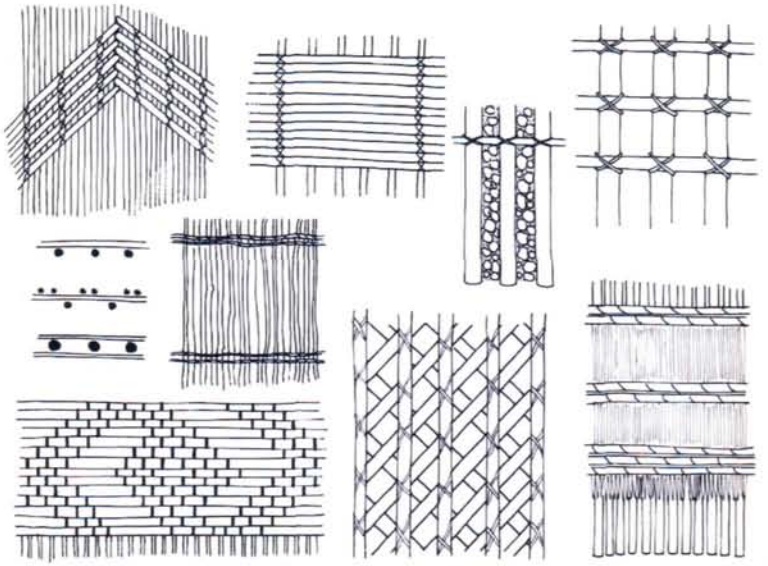
Rubble wall set with mortar plastered over on both sides. Openings and corners edged with dressed stone.



Stone rubble walls reinforced with wooden planks held in place by short wooden cross pieces. Solid rock walls sometimes dressed to imitate this technique.

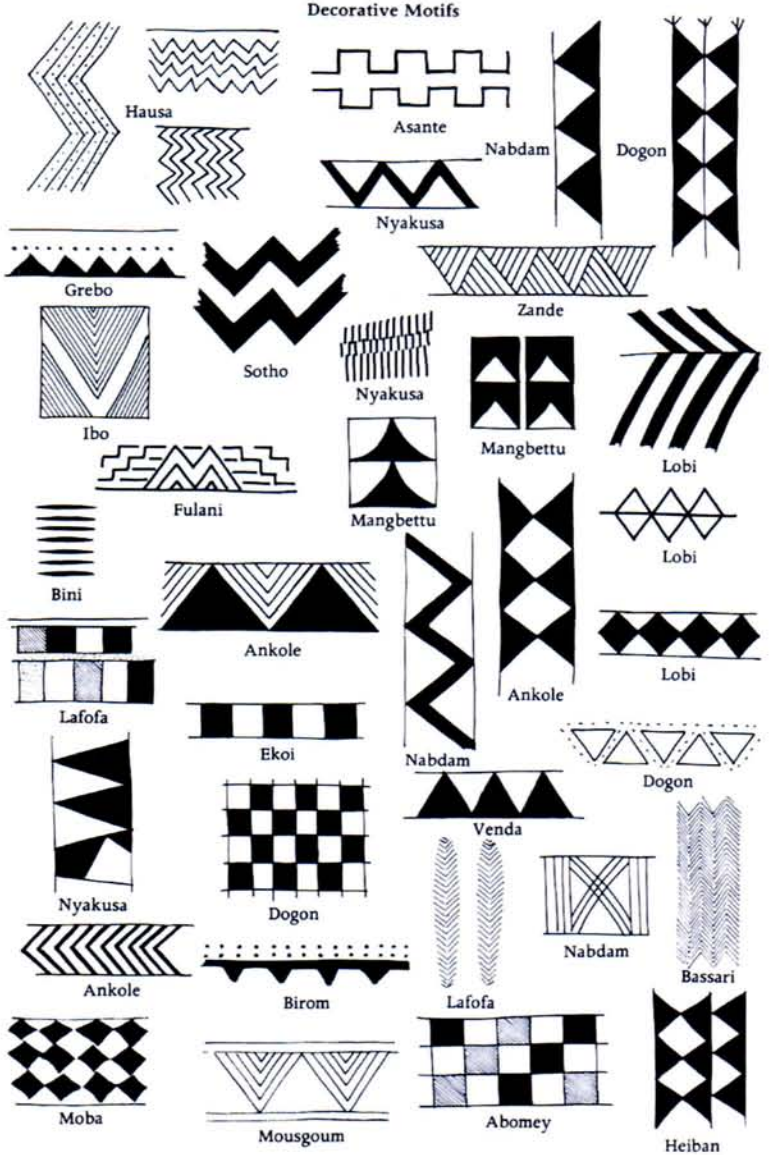


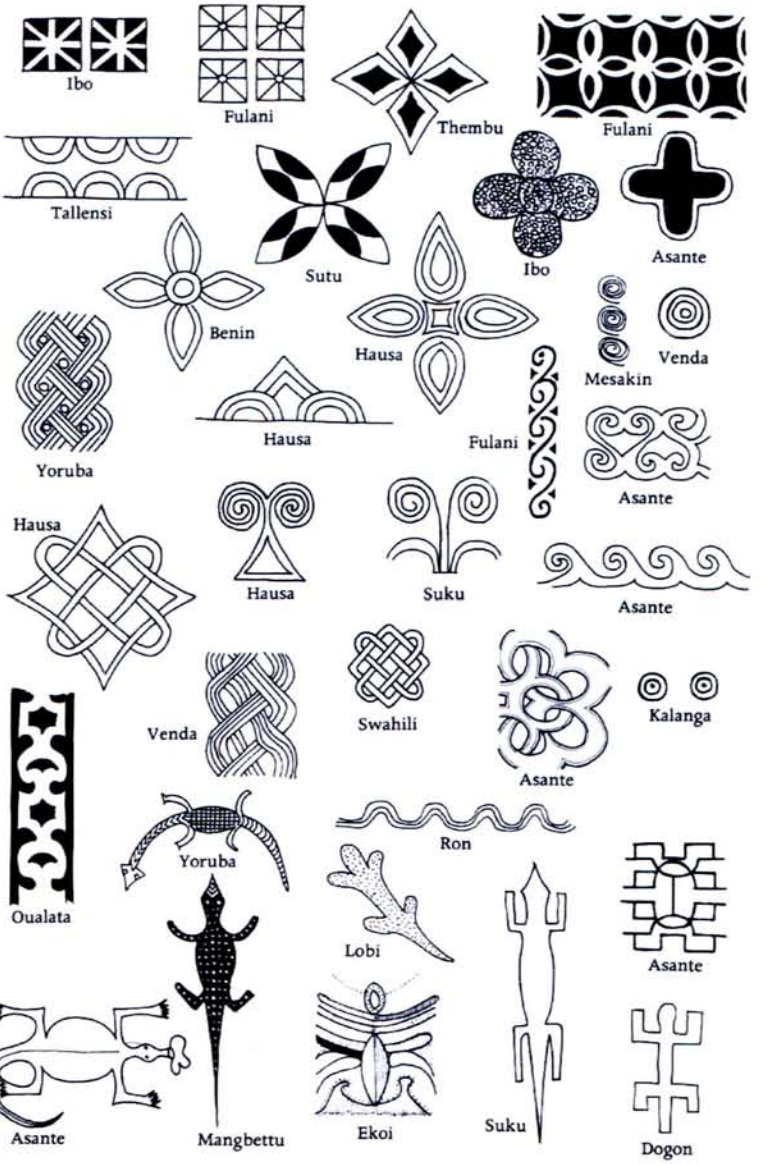
Woven cleft wood, split bamboos, palms, raffias, creepers etc. Often plastered over on inside.

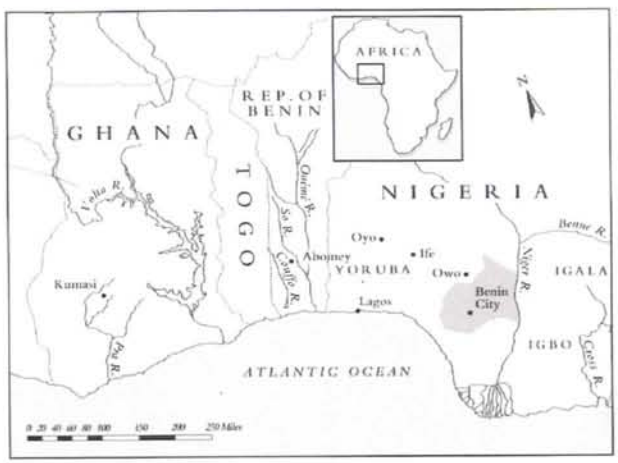


Wood, bamboo palm fronds, grass, bullmores, tied to framework, of wood, bamboo or palm fronds. Stones sometimes used as infilling. Sometimes plastered over on inside or on both sides.

Decorative Motifs







Modern architecture was founded with the utopian aspirations of tearing down obsolete spatial hierarchies and replacing them with a homogeneous and new space, meant to spur widespread processes of substitution or negation (Gausa, 436). Modern architecture was born in Western industrialized countries where progressive avant-garde ideas about design paralleled that of the social movement. The procedure with which to create a modern architecture was rarely replicated elsewhere but the end result was mimicked incessantly all over the world and often misapplied. The result was meaningless aesthetic moves, replaying the same pieces over and over again. In America, the piece was that of the tower when Mies van der Rohe's Seagram Building became the postage stamp for all skyscrapers. Mediocre knock-offs popped up everywhere and buildings lost their individual personalities. Similarly in Africa, modern forms were imported from Europe and these were usually lacking in poetry and depth of meaning.

For Africa, it wasn't until the early stages of the second World War that modernism was even able to impact the continent. The key country in the spread of modernism in the 1930s was Germany. Hitler and the fascist regime took over and a profound transformation occurred. German architects lost their jobs and their licenses, and they were forced to leave the country. Many immigrated to the United States and to Africa. Even well into the 1960s, most practicing architects in Africa where European or American.

Another interesting disconnect between the

A building in Lagos which failed structurally and partially collapsed. Weeks after it crumbled, it sat untouched with no sign of a clean-up or demolition in sight.

industrialized world of architecture and Third World architectures is the building processes. Modern architecture presupposes a division of labor between architects, manufacturers, engineers and construction workers but in many developing countries there are fewer steps in the process between conception and construction.

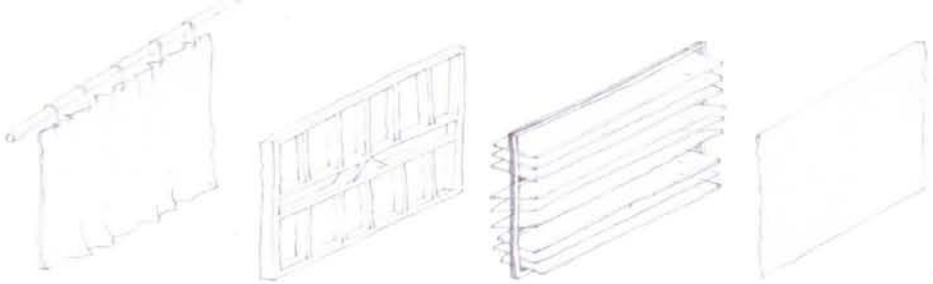
When an effort was made to incorporate traditional systems, oftentimes the result was a concocted combination of indigenous and imported. The intention of this thesis is not to create a building of fake regionalism where a few gingerbread "historical" attachments are added to an ill-conceived modern structural box. Instead, there is an effort to unearth fundamental lessons in local tradition and to blend them with an already evolved modern language.

Shortly after 1960 Africans wanted to replace all foreign architects, technicians, specialists with native personnel as quickly as possible. However, by the end of the decade, many prominent projects were falling on the desks of white men.

precedent

Nigerian buildings, homes especially, are very dark and closed off. Each opening in the house is covered with multiple layers of material and the vast majority of homes and shops have up to four layers. The most important of these is the metal screen which ranges from very basic to very elaborate. Metalsmiths are commissioned to create beautiful gateways with intricate details for wealthy clients, many times depicting biblical scenes in bar relief. These metal screens exist everywhere and are necessary on all apertures to protect from vandalism and burglary. On the down side, the bars create the atmosphere of a penitentiary and can be potentially fatal when family members are locked inside like birds in a cage (this happened to us in Lagos!).

Of secondary importance are the fabric curtains which hang over every doorway and window, interior or exterior. The main purpose of these is to prevent sunlight from heating the interiors and to deter insects. The negative consequence of these is that they don't allow air circulation and often the interiors are stale and pungent.



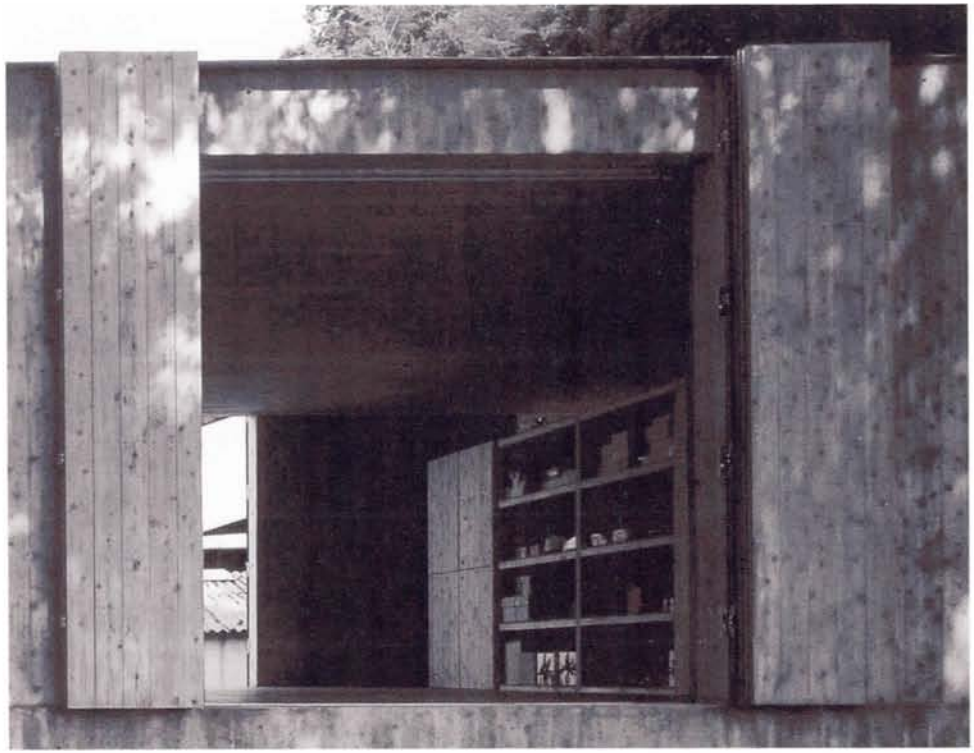
Sometimes there is a third layer placed outside the first two previously mentioned (although the order of the layers can vary). These glass louvers seem to be largely ignored once they have been installed. Usually covered in filth and/or broken, these insertions, it seems, are not used to their full potential. No matter what the weather or temperature, these easily operable louvers remain stationary and many times are not maintained or even acknowledged.

The last and most rare of the aperture insertions is the insect screen. The few times this was observed, it seemed to function mostly as a sieve for airborne dirt.

All of this of course is written from an outsiders perspective and it is very opinionated. Still, my intention is to meet all the needs of the four layers without the obvious downfalls. Reinterpreting these layers in new ways and creating new uses will also be a priority.

One way to so this is to take the idea of a screen or door and make it operable, so it is not perceived as barrier. The projects below are all examples where operability enhanced the design.

The first is a store and studio for a well-known Japanese ceramics firm. When the artists are in the studio, the doors swing open like large shutters and allow potential customers to see in. Different openings in the rectangular box create views to different stages of the ceramics process. Each of the built-in storage spaces is also related to the to a



Sambuichi Architects, Store and Studio.

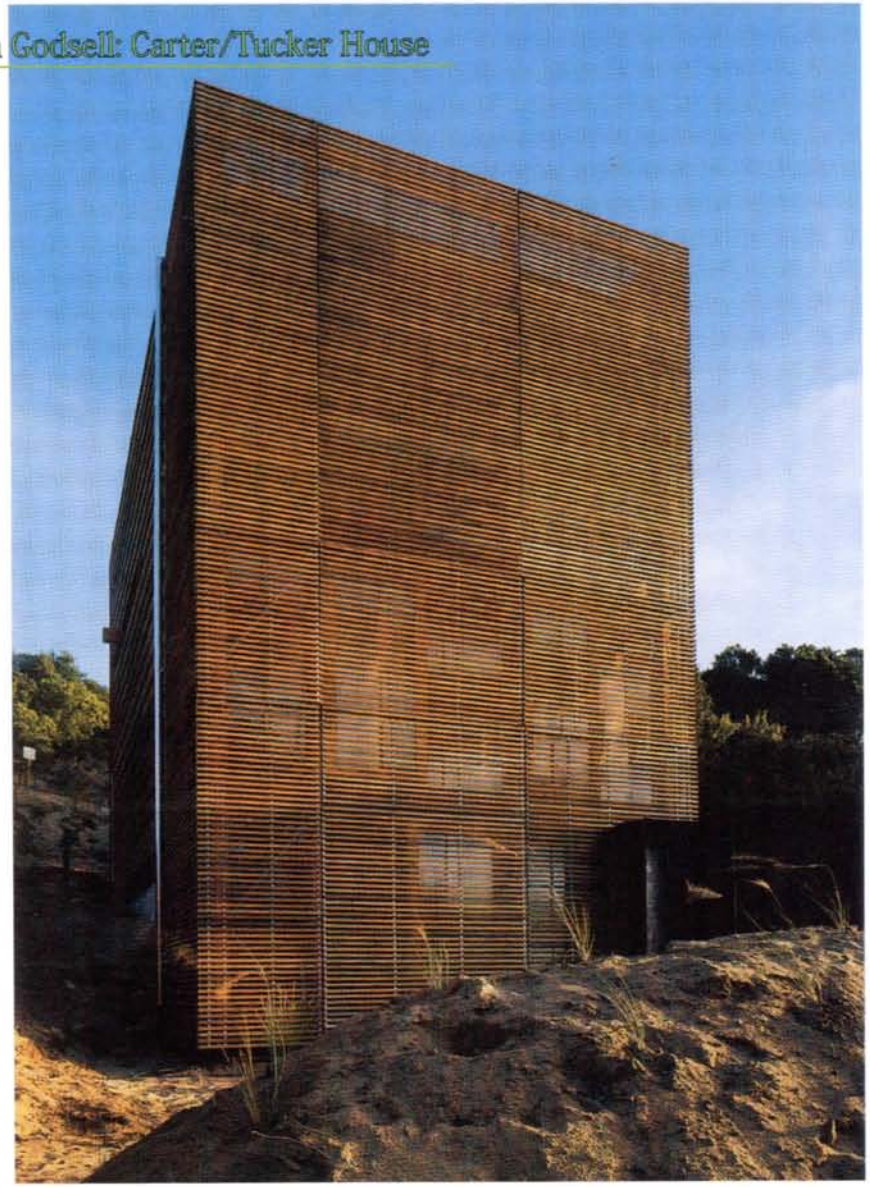
stage in the production procedure. There are spaces for raw materials, semi-finished products and fired wares as well as a studio for painting and glazing.

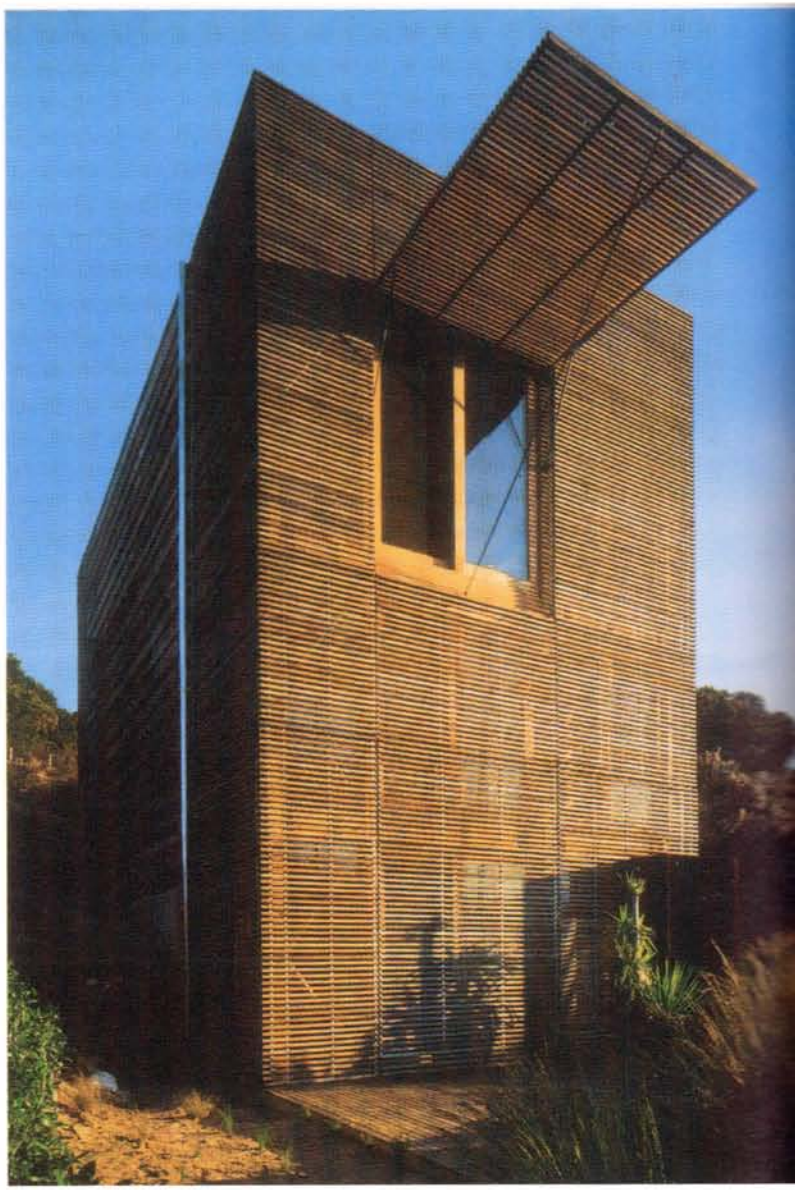
The third project is a hotel in Groningen. During the closed state, the hotel resembles a plain storage structure. During use, the facade transforms. The outer skin is finely perforated corrugated metal sheeting. The tiny holes transmit light at night.
The fourth project is Fabio's restaurant in Vienna, Austria. During the day, the glass walls fold up to become an awning for outdoor tables on the street. With not physical barrier between the people at the tables inside the restaurant and the tables outside, it is as if the customers are spilling out of the hole and onto the sidewalk. At night, the tables and chairs are pulled in through the opening and the glass is closed and locked.

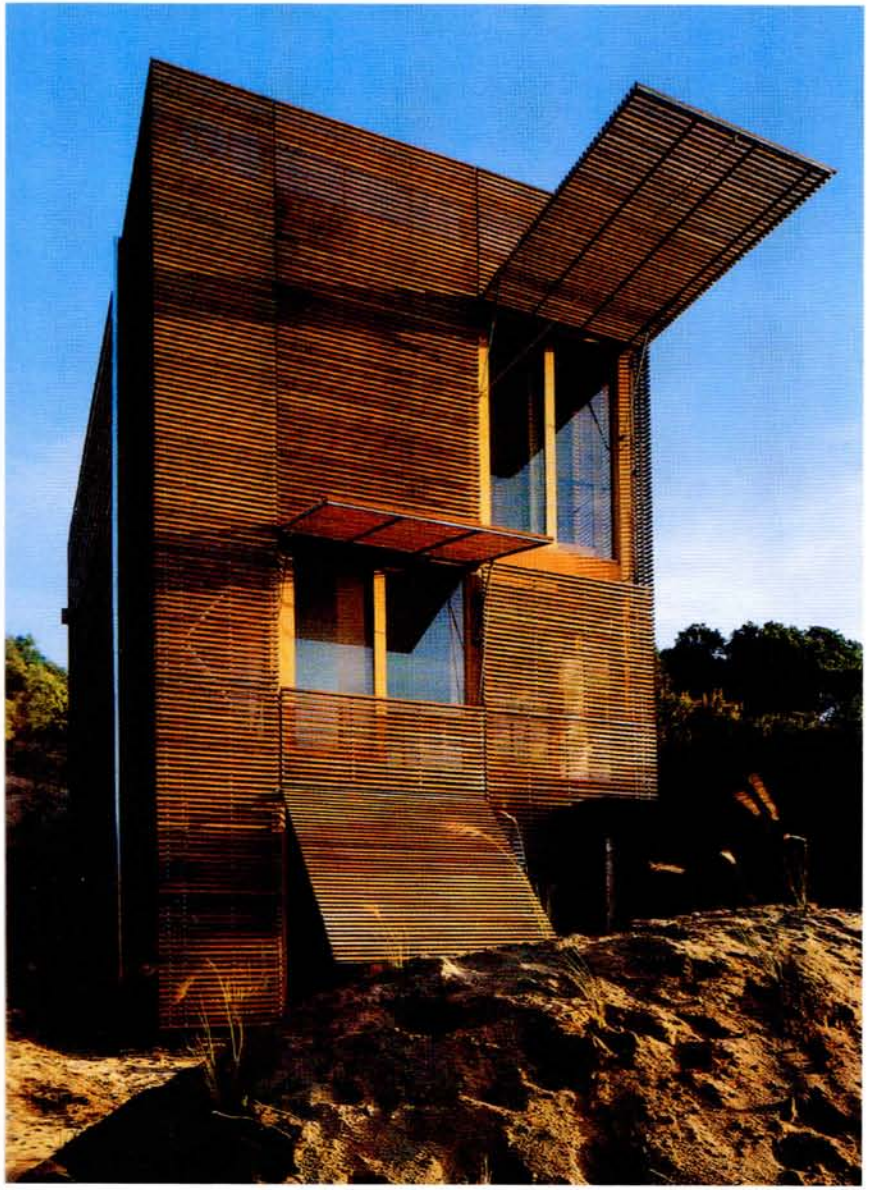
In this way, the facade is no longer static. it changes, weather, usage and time. An great example of this is Sean Godsell's Kew House:

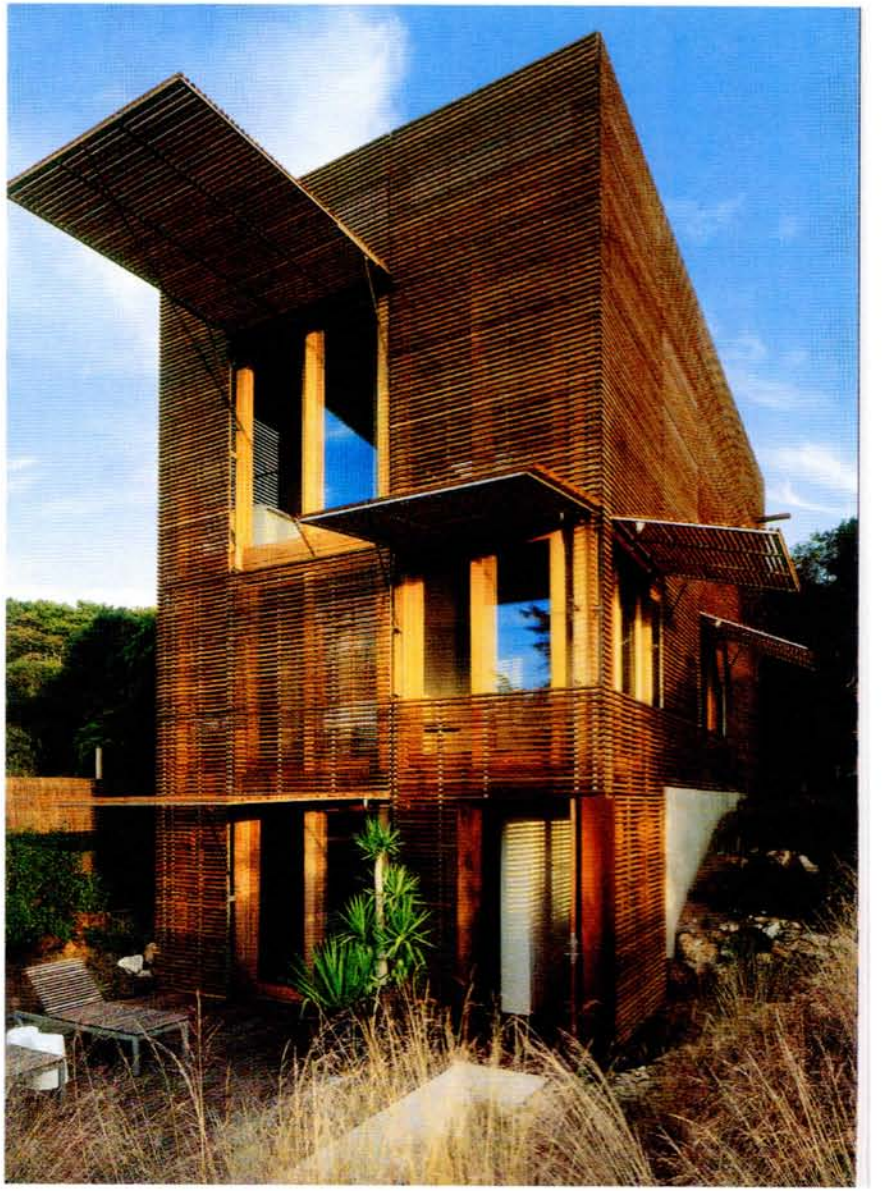
Fabio's Restaurant; Vienna, Austria.

Mahler Gunster Fuchs Architects, University of Applied Design in Wiesbaden.









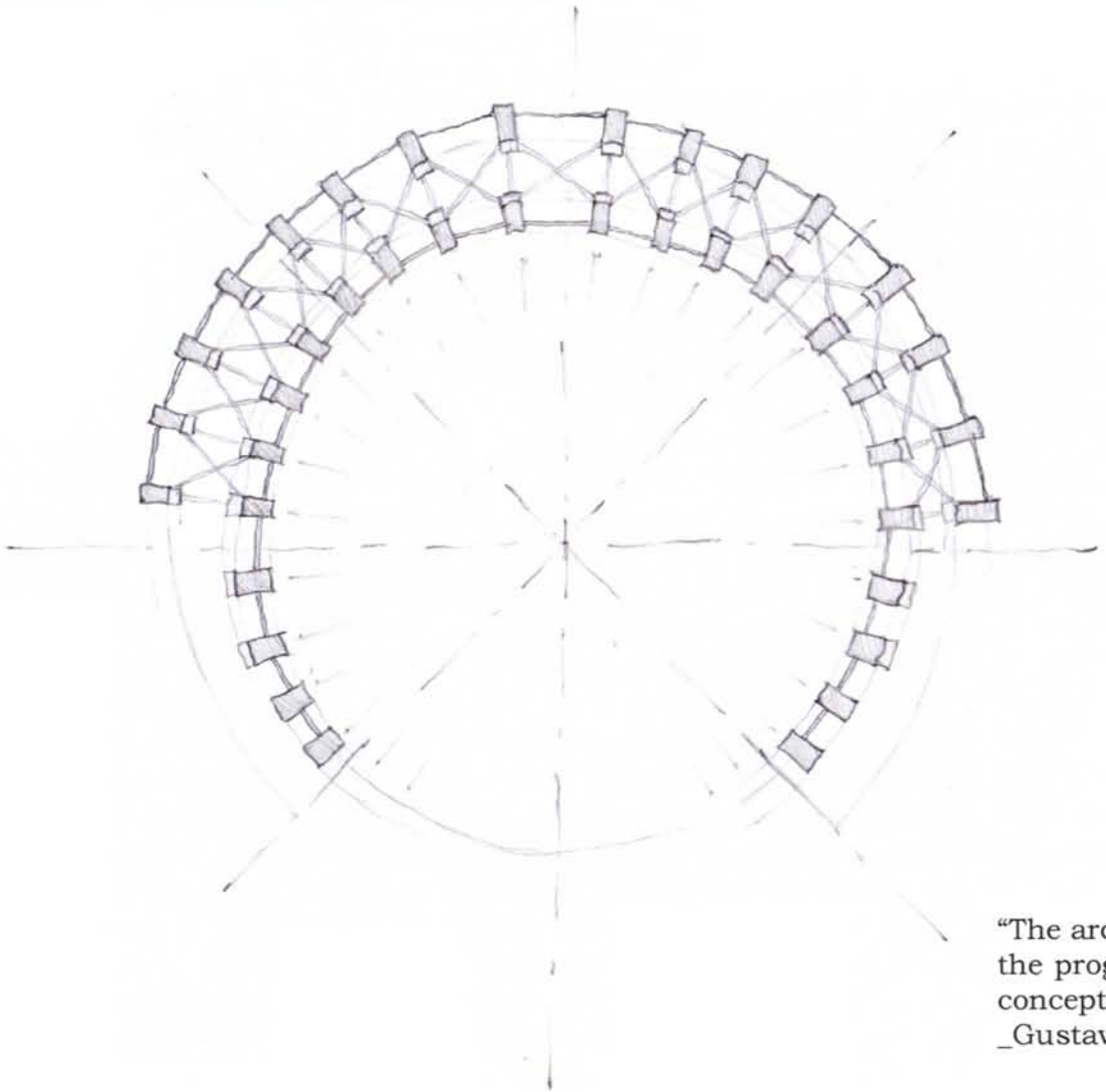
Australia is similar to Africa in that the architecture there began as a half-remembered Europe. In an effort to modernize quickly, major tracts of inner cities were demolished and terraced houses were replaced by high rise flats. Unfortunately, this created more misery than it removed. Australia in this sense, is still struggling to formulate its own architectural identity with the most damaging insertions taking place from the 1970s-90s.

He has an International interest , however, he isn't quite European and he isn't quite Japanese. He believes in the return to the humanitarian modernism of Scandinavia and California.

Godsell looks to indigenous constructions of the Aboriginals, but focuses more on the engineering genius of designs such as the large fish traps that they crafted from stone. He believes in the clarity and singularity of the image, while simultaneously providing multiple operability. He has been described as "out Eamesing the Eameses" in how he industrializes the construction process.

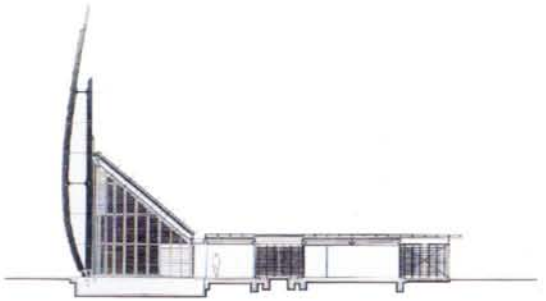
For the Kew House, Godsell maximized the idea of the metal screen. The entire skin of the rectangular house is made of oxidized steel. The house works as the reciprical of Nigerian homes in that the screen is about exposure, not enclosure. By using this technique for the Institute, the buildings can be protected while displaying the work that is taking place within.

Godsell uses found objects- rust, oiled, secondhand boards and recycled decking. There is a lack of 'precious detail' and instead focuses on the glorification of the rudimentary construct. High on thought, low on luxury.

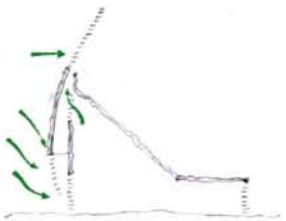


"The architect responded to the breadth and specificity of the program by doing away with Eurocentrist notions of concepts like culture or architecture."
_Gustavo Gili

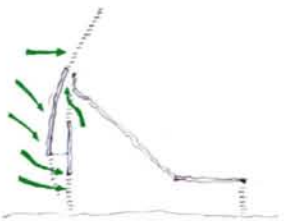
When Renzo Piano designed the cultural center in Noumea, he conducted anthropological research to pay homage to traditional Kanak culture. Although he used contemporary language, the inspiration is quite clear. Ten structures of different sizes and functions are grouped together on a tiny pennisula mimicking the orientation of their houses in a kanak village. The traditional architecture inspired in form and in material.



The verticality of the framework was made to mimic the tall pine trees of the region and the native huts of the villages.

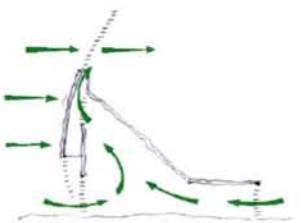


wind less than 3m/s



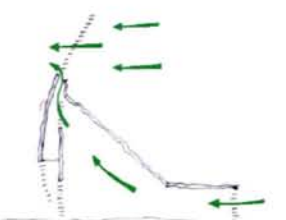
wind 3 to 6 m/s

wind 6 to 10 m/s



wind 10 to 15 m/s

cyclone



wind from opposite direction

Program- three zones-

1_ permanent exhibition of Kanak culture
A space for temporary shows
An auditorium
Open-air amphitheater

2_ research work
Conference room
Library

3_ activities relating to dance, music, sculpture and painting

The buildings are positioned with their backs to the water in order to take advantage of the sea breeze for ventilation. A mechanical opening device controls the fresh air intake of the buildings.
(see wind diagrams)

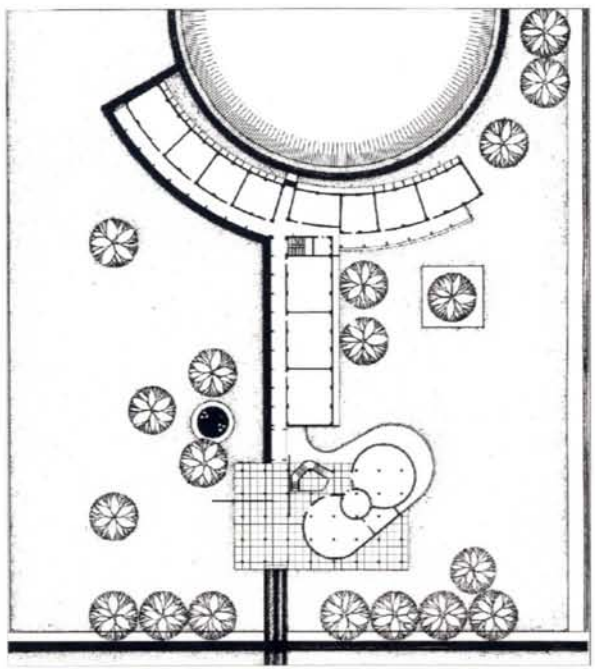
The exterior remains traditional while the inside is equipped with the most up to date technology. By using wood and steel, there is a juxtaposition between traditional and contemporary materials.

Muzharul Islam

College of Arts and Crafts

Dhaka, Bangladesh

1953



The College of Arts and Crafts announced the beginning of a Bengali modernism that deliberately stood away from both stigmatized colonial and hybridized traditional forms. It achieved an immediate iconic status in Dhaka, as a work in a modernist vocabulary inflected by place and climate. The project is characterized by low sprawling buildings in a natural garden setting on an urban site. The pavilion-like openness of the buildings, pathways through varieties of enclosures and garden spaces and a natural and sensorial ambience create a campus ideal for the contemplation and learning of the arts.

The school is located in Dhaka's Shahbagh area, known for its gardens and parks. The site is a beautiful wooded tract of land facing a large maidan, or park, to the south. A minimum number of trees were allowed to be cut down in the course of building and landscaping. The design requirements for the new school, which evolved out of the existing School of Arts and Crafts, included new facilities for painting, sculpture, ceramics, graphic and commercial arts. The school has since been converted into a college and has become a part of Dhaka University.

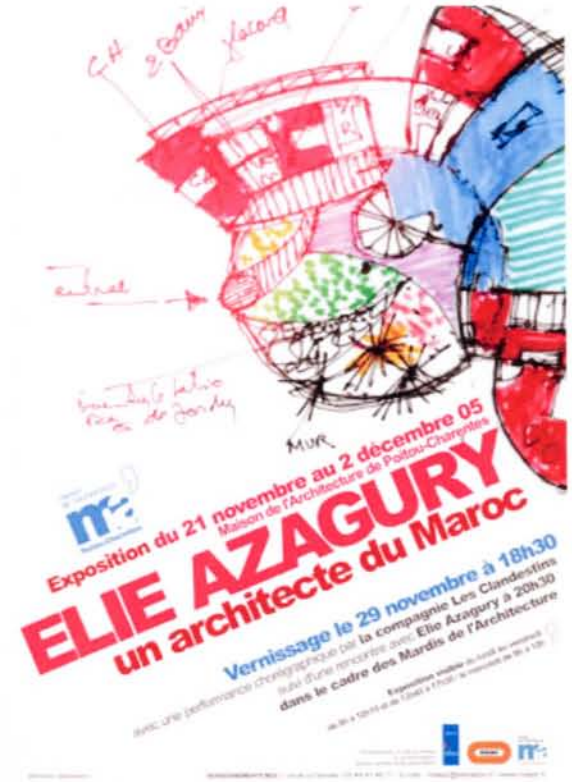
The project comprises a building for the college intended to accommodate 300 students on a site adjacent to the park. The college classrooms and studios are on the park side, while the offices face a road to the east. Circulation is provided by a wide, double-deck gallery that circumscribes the building, protecting the studio and classroom walls from direct solar insulation. Brick columns support the galleries, and wood shutters installed between the upper half of the column shade the galleries.
The front block of the school, which stands on pilotis, allows entry to the campus without any formal obstruction, but articulates the threshold between large open spaces and enclosed classrooms. This block contains common rooms for students, rooms for teachers and staff and a small gallery. The teaching blocks contain classrooms of various sizes with provision for cross-ventilation and north light. A curvilinear volume of the teaching block redefined an existing pond in a circular shape.

In this project, machine-made bricks were used for the first time in Bangladesh. Therefore, it was necessary for the architect to instruct the masons in laying the brick

and pointing the joints. The brick walls are load-bearing and the floors and roofs are constructed with reinforced concrete slabs. Brick facades, both exterior and interior, were left exposed. The ceilings are finished with plastic paint on cement plaster, the floors have a terrazzo finish.

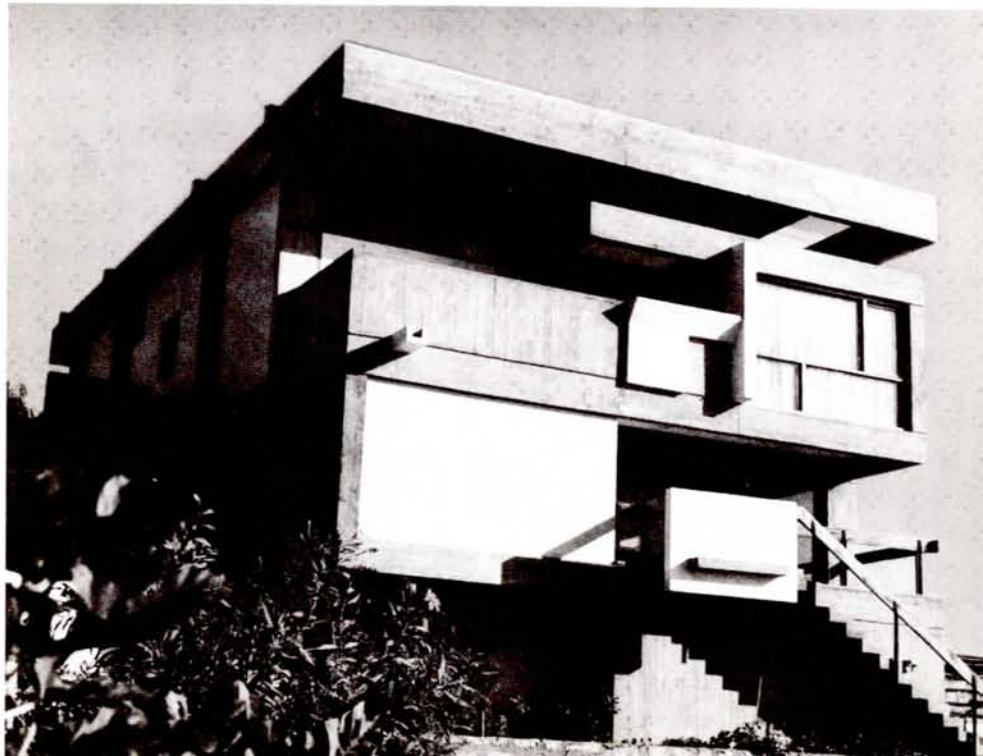
Muzharul Islam was trained first at the University of Oregon and later at Yale University under Paul Rudolph. He has been active since the early 1950s in defining the scope and form of a modern architectural culture, first in Pakistan, then in Bangladesh. His steadfast commitment to a modernist ideology stems from an optimistic vision for transforming society. For Islam, modernism means more than an architectural vocabulary; it means above all, an alternative ethical and radical approach geared towards addressing the social inequities and the accompanying deprivation of much of South Asia.

This project's relevance transcends program, climatic design and theory, and many parallels can be drawn between his agenda and my own. Islam has insisted on architecture's link to larger social and political issues and his work reflects a a tension between social engagement and artistic autonomy, between political ideology and architectural production.



Azagury's work, although older, is an important precedent for African projects. As a Moroccan architect, he had a vested interest in the future of Africa's identity within architecture. He was educated in the French tradition in the mid-1940s and built many structures of French-influenced design. From 1947 to 1949 he undertook several study trips to Denmark, Yugoslavia, Hungary, Belgium and Italy. In Sweden he collaborated with the architect Ralf ERSKINE on many projects such as schools, social centers, private dwellings, ski resorts and urban planning. However, through his African commissions, he developed a new originality in his work. He laid the foundation for later modern architects searching for an African voice. Even today, projects can be traced back to the basis created by Azagury. He was also a part of some large scale collaborations working with new concepts in which a real impact was made. Here, a new standard was successfully translated into reality.

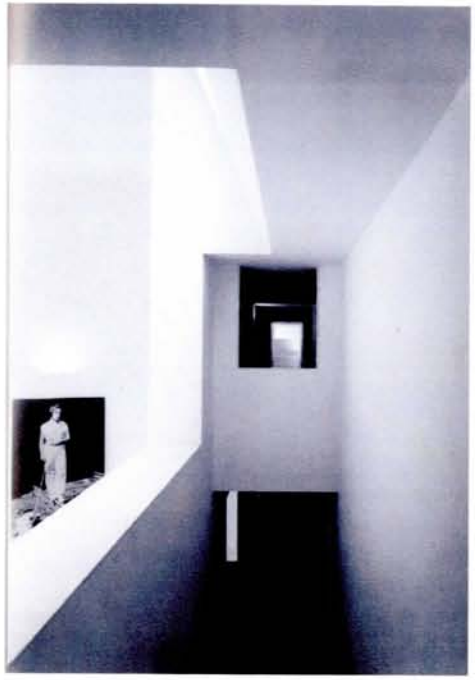
Azagury participated in the big work-sites of the 50's such as the construction of the new Agadir and the tourist resorts on the north coast of Morocco. He also conceived many structures in the private, public and semi-public sectors. From 1957 to 1965 he undertook several study trips in the U. S. S. R, China, Mexico, Brazil, Peru, Bolivia and Guatemala. From 1980 to 1981, he stayed in the United States, occupied with research material gleaned from his travels. He is a member of the International Congress of the Modern Architects (C.I.A.M) and the Cercle d'Etudes Architecturales of Paris, he collaborates in the magazine "The Blue Square". From 1958 to 1971 he served as the president of the Superior Counsel of the Order of Architects in Morocco.

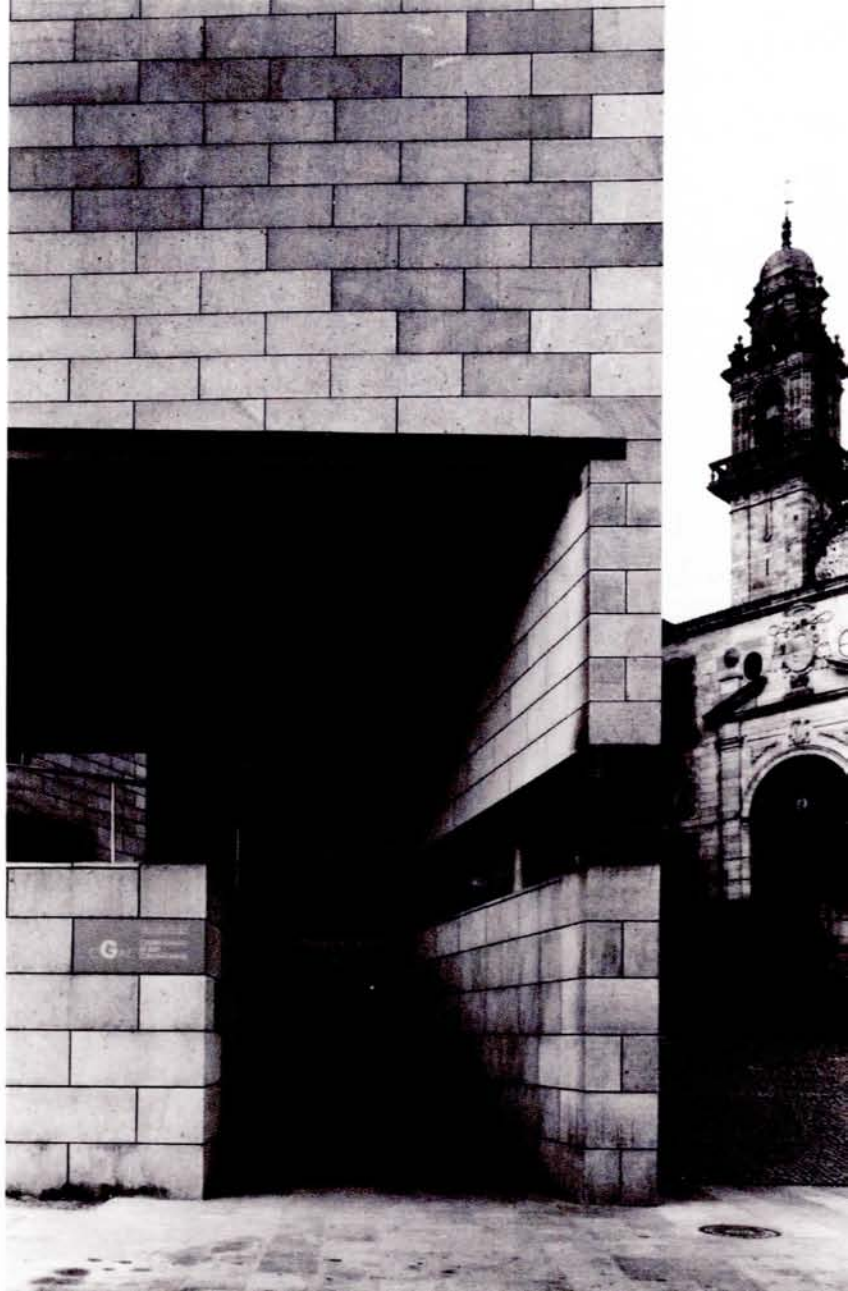


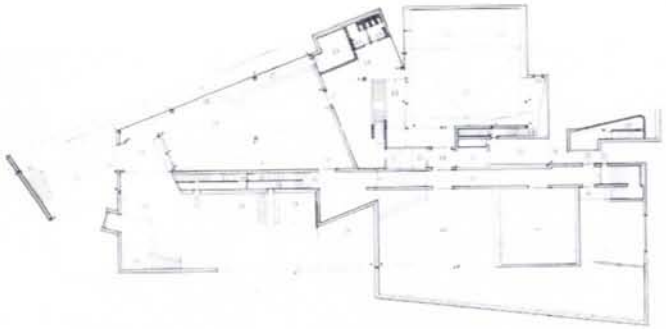
Similar to my own site, Siza's site for the contemporary art museum was a puzzle to be resolved. The nature of the lot was roughly that of a triangle with the convent of Santo Domingode Bonaval directly adjacent to it and an old garden with ruins behind it. From the very beginning, Siza met opposition from the convent because they were afraid that his project would compromise the integrity of the religious building. He was asked to offset from the road and "hide" the new museum as best he could.

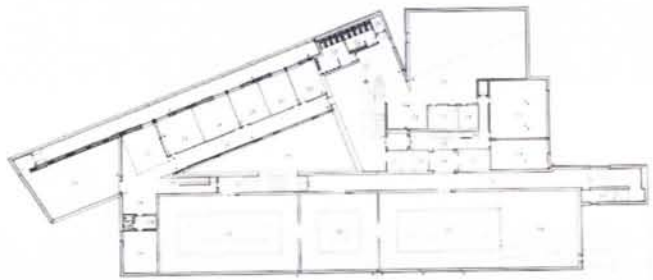
My initial thoughts on my own site were similar to this. Taking the half of the site which faces away from King's square, I felt that I had the backside or the rear which was therefore less important. Especially since I was bordering the UNESCO market stalls, I was afraid that whatever intervention I did make would have to be modest in scale and not disturb the existing structures. Siza's rebuttal to the concerns presented to him was that a cultural center has meaning beyond being the annex to a church and that modern architecture shouldn't be feared. Similarly, I now realize that my project is much more than the backdrop to the UNESCO road. The campus will therefore improve Igun Street, not just merely exist as a boarder to it.

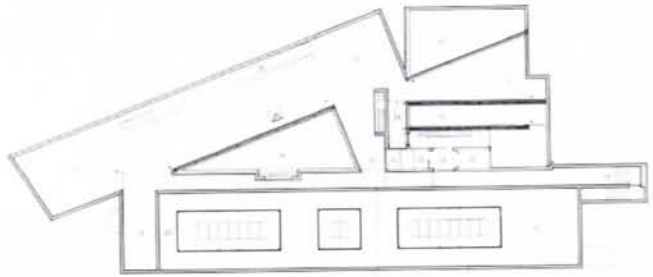
Siza thought of the program as three main categories of function: one being the atrium and the offices, two being the auditorium and the library and three being the exhibition halls. He the placed the three categories in a triangle and placed the program according to function. The offices were placed with proximity to the road, the auditorium and library are moving away from this, and the exhibition halls boarders the garden with views to the serenity of the green space. Triangle residual spaces

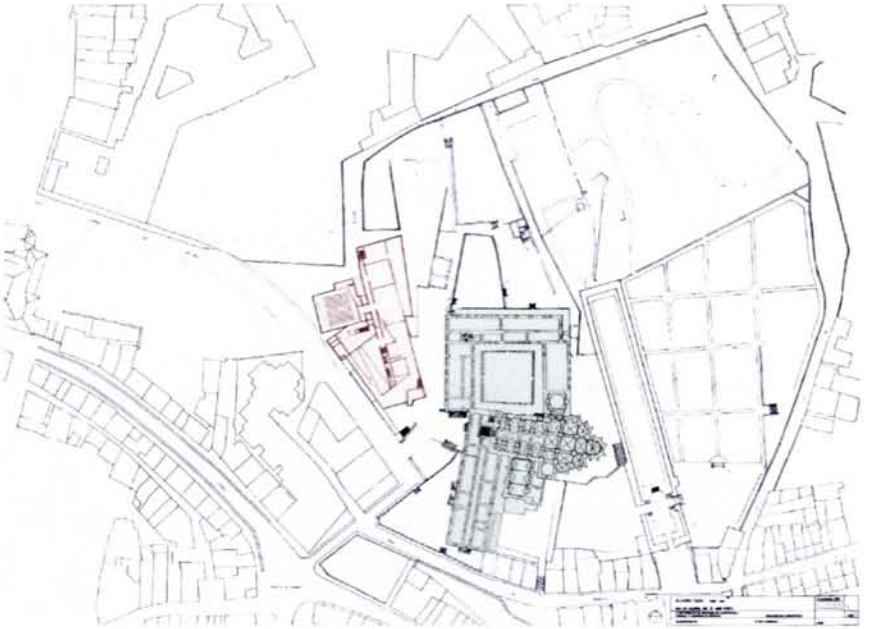












(which initially seem a bit peculiar) are situated at key points to help receive and distribute light into the building.

The main circulation bar runs the length of the project, piecing through the center of the building and contains a combination of ramps and stairs. Siza plays with aperture throughout the project and the formation of views is very strategic and intentional. While navigating through the museum, openings allow visitors to gaze into different galleries or spaces that they cannot immediately get to. This stimulates the entire process of circulation and urges guests to continue to until they reach the rooms that they caught sight of but hadn't visited yet. It also works as its own advertisement, displaying at a glance what exhibitions are currently on display.

The galleries themselves were designed for a flexibility of spaces. Since the exhibits are constantly rotating to different museums, the spaces themselves have to accommodate all different kinds of artwork. Instead of plain square spaces with no character, Siza believes in an artist's dialogue with a particular space and this is why each gallery is uniquely configured. The museum answers a particular type of problem while simultaneously allowing for flexibility. A building has a life outside of its immediate time and mere programmic contents.

This same model can be applied to my project as well. Although the medium will be restrained by what is taught at the school, the actual works will be constantly rotating as different students pass through the school and art is created and sold.

Balkrishna Doshi

IIMB

Bangalore, Karnataka

1977- 1985

The IIMB was one of four institutes commissioned by the government of India shortly after independence to train the future leaders of a new industrialized society. The rise of new middle class in India in the 1990s is partially a result of this decision.
The main campus consists of lecture halls, a library, a cafeteria and administrative services. Dormitory blocks set at angles with connecting walkways are located to the north.

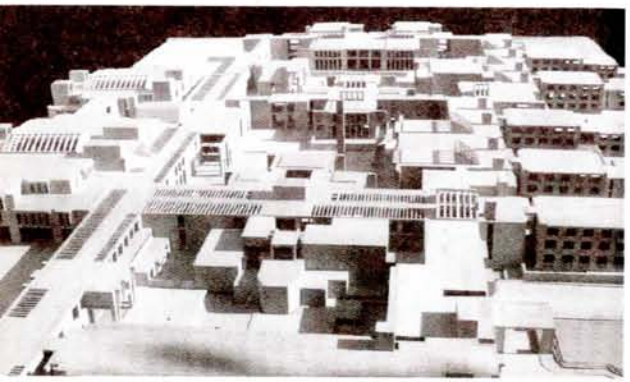
It has been heavily documented that Doshi was looking at Louis Kahn's Indian Institute of Management in Headband (1962-74) and that the IIMB is in fact a 'critique' of this project. What is not focused on nearly as much is that Doshi relates his spatial composition of the campus to his understanding of the spaces of Fatehpur Sikri, Emperor Akbar's 16th century ceremonial capital. Upon initial inspection of the Mughal City of Fatehpur Sikri, the overall site plan seems to be similar to those of Kahn's with that of intersecting corners and a diagonal procession; but taking a closer look, one can see the pattern of the city is far more intricate and irregular. While some of the enclosures are symmetrical, they each contain elements that break strict axiality and they are joined to each other in dynamic, rather than static proportional relationships.

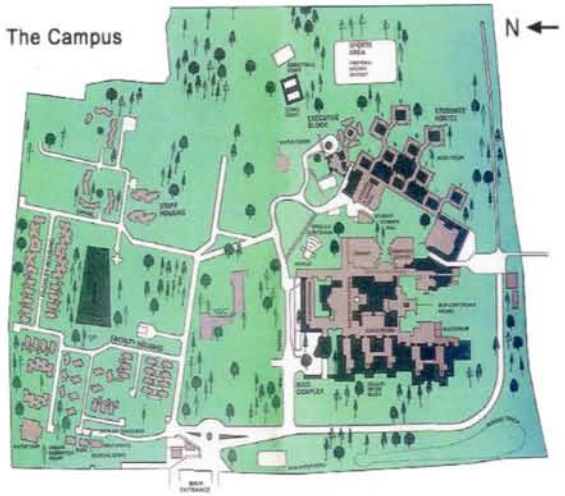
The buildings of Fatehpur Sikri are linked by a series of courtyards and the progression of buildings is unified within a single walled enclosure. Shade is provided by fine stone screens, pavilions, walkways and balconies, beneath domed canopies and deep eaves supported by elaborately carved brackets while air circulates freely.

What Doshi takes from this is his corridors, mo appropriately described as covered pedestrian streets th join the diverse elements together. According to Dosh these were designed "to provide innumerable vistas focal points for generating a dialogue with oneself. The corridors are sometimes open, sometimes with a pergo and sometimes topped with a glazed skylight. To furth heighten the spatial experience, the width of the corrido was modulated in many places to allow for casual eati and interacting to take place."

With its dense population and tight family structure, Ind is a communal country and solitude is rare. By making possible for students to have the chance to be alone if th want to be, Doshi offers a valuable alternative to the gro encounters that are inevitable in this academic society.

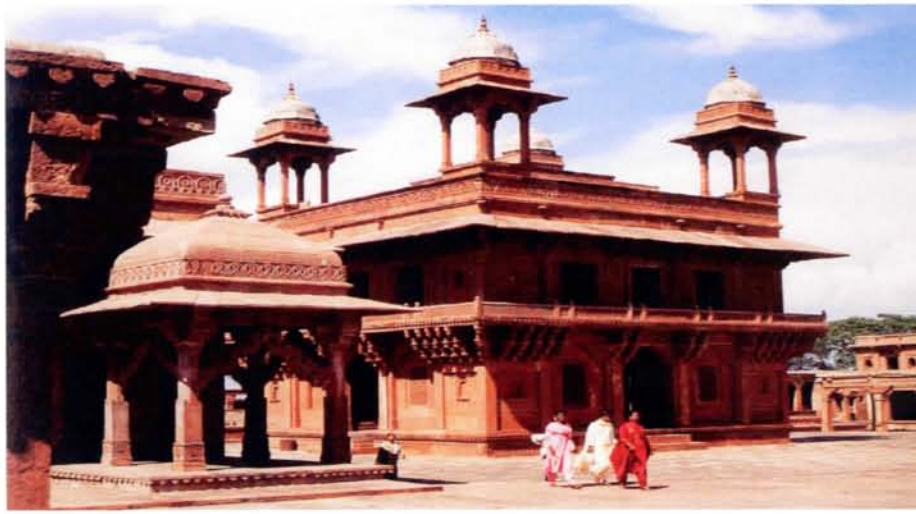
"A realm of spaces which my be connected by ways of walking and the walking is a protected kind of walking (which) you consider as high spaces together with low spaces and various spaces where people can sort of find the place where they can do what they want to do."
_Louis Kahn

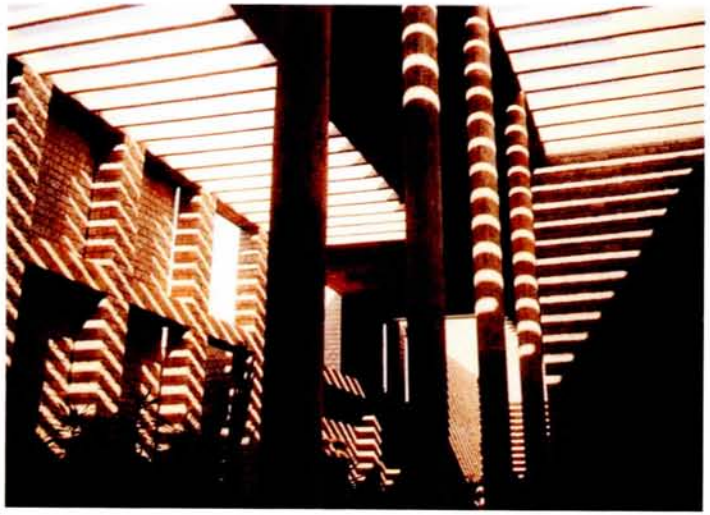




The pavilions placed inside the enclosures at Fatehpur Sikri gain in stature, rather than being diminished by their surrounding frames. In turn, the placement of the pavilions prevented the frames from becoming repetitious.

In a large complex such as IIM, the main problem facing the architect is how to make each portion distinct and yet provide overall unity, to create institutional identity. This is particularly pertinent to my thesis since I as well am doing an institution with multiple departments, and my intervention must connect formally with Emily's half of the project. The planning principles used in Fatehpur Sikri provided an example for such unity, and also more subtle lessons about materials, consistency of details and hierarchy of scale, all evident at Bangalore.





Development balancing near-term interests with the protection of the interests of future generations


sustainable development

rainwater collection from the rooftops into wells

Sustainable development is an imprecise term commonly used to describe economic development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept links development and environmental problems, and refers to any construction that can be maintained over time without damaging the environment.

It is naïve to image that architecture could wipe away the deep divisions in our society. It cannot be suggested that architects, no matter how caring and buildings, no matter how well crafted, could completely change existing social problems and many other crises of modern life. Still, it is disturbing to think of so many architects professing powerlessness in civil affairs. The architect is the one whose built work will become part of the community and ideally a work that enriches society.

Sustainable development is currently at the top of global policy for research and development. The main interest in sustainable development has come from the pressure groups and particularly those associated with the green movement who saw the depletion of non-renewable resources (and particularly energy stocks), the pollution of the air and water and the breakdown of social conscience through globalization, as leading to the demise of man-kind and the balance of nature (the eco-system) which presently sustains living creatures.

There is a moral imperative to take the long term view and to consider the impact of decisions taken now on generations that would follow. Despite the varying opinions, there is a general consensus that something is wrong, and that man-kind has a duty to do something about it.

The information technology age has a huge impact on the way we behave today. In everything from dating, to a workout at the fitness center, to educational classrooms, we see constant revisions taking place to update our everyday life for the present and future. In the United States we as a culture have been forced to adapt as newer and newer technologies have been introduced. Although the movement is expeditious here, the transition is much more hasty and abrupt in a developing country. New devices, procedures, techniques and opportunities are turning up in developing countries before anyone there even understands how to incorporate them into daily life. It is interesting to speculate what the future will hold in terms of the built environment as there continues to be an increased connectivity between humans, and between humans and machines. Global connections allow electronics to circulate to all parts of the world, and by using these with advanced computer systems, the world begins to upgrade as one instead of in separated segments at differing times. There are six trends of information technology that are discussed in "Evaluating Sustainable Development" which can be studied to further understand how sustainable

development can be integrated. Broadly they are as follows:

1. Convergence_
The concept of convergence is at two levels. At one level the technologies themselves are converging together through digital processes so that they can interact in a way that has not happened before. Television, audio, telephone, camera, music can now be transmitted and received by a single source machine. It allows all media to be incorporated together. The second is convergence of content. The Internet even as currently operated has few boundaries and knowledge is passed seamlessly around the world. Those who own the distribution of such knowledge may find themselves in a strong strategic position. It is a way of influencing values, sometimes intentionally and sometimes not. All knowledge has a filter which is provided by the authors or disseminators and this can be good or ill. It provides bias which in the normal course of events is subject to debate and criticism. This provides checks and balances. But what happens when a piece of knowledge is used repeatedly for convenience and expediency? It can establish a 'conventional wisdom' in which thinking can be fossilized and an oppressive tool can emerge. The benefits then depend on the benign or malign nature of knowledge. The new technologies are designed to be repeated to aid the less informed. Who will provide the checks to take on the large-scale providers? For those opposed to a particular filter on knowledge, it represents a threat which can lead to an undermining of their perceived value system and in extreme cases, to acts of terror as the only way out.

2. Connectivity_
Alongside convergence, we need connections to be made so that we can realize the potential of sharing these different media. The last decade has seen a massive increase in penetration of computers per head of population in the developed world coupled with access to a wide variety of devices to transmit and receive information. Mobile phones are now pivotal points for the exchange of music, knowledge, visuals, games and many other things, in addition to the use for which they were originally developed. We are now moving towards 'knowledge grids' where computers act together and become more powerful and their knowledge more accessible. This opens avenues for sharing information in ways we have never seen before. These machines can also act as the repositories for data collected by sensors and it maybe the kind of knowledge capture required for complex domains to become available without the enormous expense of manual labor.
3. Culture_
As technology becomes more user-friendly and education on how to use it becomes more widespread, the patterns of behavior among human beings will adapt to the new environment. The computer games industry has changed the nature of leisure time, and the Internet has changed the way students access knowledge as well as having led to the development of on-line shopping. These are all indicators of behavior change and it is difficult to know where these developments will end. Will there be a reaction to them reversing current extrapolations or will they continue to a point where an outsider observer might see the human race as an interconnected whole, entirely inter-dependent and able to be manipulated at will? Extreme scenarios these might be, but it could happen. What is clear is that at the moment the way we live our lives has changed dramatically in one generation.

4. Creativity_

For many years computers have been seen as machines that constrain creativity. The rules which have to be obeyed to operate them have been seen as limiting what can be done. This is changing, and increasingly, and the technology mimics the real world and the degrees of freedom we experience in the real world become available in the virtual environment. In fact they may well go further because the things at which humans beings are not good may well be the things in which machines excel, and the combination could lead to real breakthroughs in creativity. The boundaries may well disappear and already the technologists are talking about enhancing human performance by 'jacking in' the machine to the brain. At present it is to enhance the brain where there is impairment, but in the future it could be used for overcoming natural human constraints and providing life enhancement.

5. Content_

It is the content of these knowledge networks that is critical to their take-up and the way they are used, and what actions follow from this increase in knowledge. The knowledge has the power to bind people together by dispelling ignorance and allowing free communication. On the other hand, it has the power to divide and reinforce prejudice. It remains to be seen what this will do to make communities more sustainable. Will they come together or will they fight? Already tensions can be seen between communities where there is strong religious belief that divides them. Does the group's value system, as conveyed by the technology lead to the undermining of the other? Is it a tool for harmonization or dissent? It is likely both, but which will prevail at a particular point in time we just do not know.

6. Collaborative working_

Despite the clustering of those engaged in information technologies in certain parts of the world, there is also a development in collaborative working across normal geographic boundaries. Airplanes are designed and constructed with design and subassembly plans thousands of miles apart. Supply chains for industry are linked through the Internet and can act online and monitor easily the performance of their teams. Many firms encourage their personnel to work at home for part of the week to avoid paying for large buildings and to assist performance. What does this do for the concept of a sustainable community? Does it enrich or destroy?

Although there are perhaps a few words with which I disagree with, I believed the previous text was so concise and accurate to my feelings that I felt the need to include a copy of it here.

Sustainable Energy in Architecture

Energy efficiency is perhaps the most important single goal of sustainable architecture. Architects use many different techniques to reduce the energy needs of buildings and increase their ability to capture or generate their own energy.

Heating Efficiency

Heating systems are a primary focus for sustainable architecture because they are typically one of the largest single energy drains in buildings. Passive solar designs allow buildings to harness the energy of the sun efficiently without the use of any active solar mechanisms such as photovoltaic cell solar panels. Typically passive solar building designs incorporate materials with high thermal mass that retain heat effectively, and strong insulation that works to prevent heat escape. In addition, low energy buildings typically have a very low surface area to volume ratio to minimize heat loss. This means that sprawling multi-winged building designs (often thought to look more "organic") are often avoided in favor of more centralized structures. Traditional cold climate buildings such as American colonial saltbox designs provide a good historical model for centralized heat efficiency.

Windows are placed to maximize the input of heat-creating light while minimizing the loss of heat through glass (a poor insulator). In the northern hemisphere this usually involves installing a large number of south facing windows to collect direct sun and severely restricting the number of north facing windows. Certain window types, such as double glazed windows, provide much better insulation than conventional glass windows. Deciduous trees are often planted in front of windows to block excessive sun in summer with their leaves but allow light through in winter when their leaves disappear. Evergreen plants are often planted to the north of buildings to shield against cold north winds.

Cooling Efficiency

In warmer climates where cooling is a primary concern passive solar designs can also be very effective. Masonry building materials with high thermal mass are very valuable for retaining the cool temperatures of night throughout the day. In addition, builders often opt for sprawling single story structures in order to maximize surface area and heat loss. Buildings are often designed to capture and channel existing winds particularly the especially cool winds coming from nearby bodies of water. Many of these valuable strategies are employed in some way by the traditional architecture of warm regions.

Alternative Energy Production and Building Design

Active solar devices such as photovoltaic solar panels help to provide sustainable electricity for any use. Roofs are often angled toward the sun to allow photovoltaic panels to collect at maximum efficiency, and some buildings even move throughout the day to follow the sun. Undersized wind turbines (normal turbines are often over 250 feet)

are becoming increasingly practical for individual consumers and builders. Active solar water heating systems have long provided heating-specific energy in a sustainable manner. Occasionally houses that use a combination of these methods achieve the lofty goal of "zero energy" and can even begin generating excess energy for use in other structures.

Building placement

One central and often ignored aspect of sustainable architecture is building placement. Although many environmentalists envision the ideal home or office structure as an isolated place in the middle of the woods this kind of placement is often detrimental to the environment. First such structures often serve as the unknowing frontlines of suburban sprawl. Second isolated structures usually increase the energy consumption required for transportation and lead to unnecessary auto emissions. Ideally most building should avoid suburban sprawl in favor of the kind of light urban development articulated by the New Urbanist movement. Careful mixed use zoning can make commercial, residential, and light industrial areas more accessible for those traveling by foot, bicycle, or public transit.

Sustainable Building Materials

Waste management

Sustainable architecture focuses on the on-site use of waste, incorporating things such as grey water systems for use on garden beds, and composting toilets to reduce sewage. These methods, when combined with on-site food waste composting and off-site recycling, can reduce a house's waste to a small amount of packaging waste.

Re-Using Structures and Materials

Some sustainable architecture incorporates recycled or second hand materials. The reduction in use of new materials creates a corresponding reduction in embodied energy (energy used in the production of materials). Often sustainable architects attempt to retro-fit old structures to serve new needs in order to avoid unnecessary development.

Social Sustainability in Architecture

Architectural design can play a large part in influencing the ways that social groups interact. Communist Russia's Constructivist Social condensers are a good example of this, buildings which were designed with the specific intention of controlling or directing the flow of everyday life to "create socially equitable spaces". The buildings and art of Russian Constructivism were used as propaganda displaying radical forms, imagery and text to bring about political and social change.

Sustainable design can help to create a sustainable way of living within a community. While the existing social constructs can be seen to influence architecture, the opposite can also be true. An overtly socially sustainable building, if successful, can help people to see the benefit of living sustainably; this can be seen in many of Rural Studio's buildings or Studio at Large. The same can be said for environmentally sustainable design, in that architecture can lead the way for the greater community.

Art can be a powerfully positive social force. It can help to reduce stress in many situations, lowering the risk of stress-related health problems, both physical and mental. Art can also be a way of individual expression, which can add to the community as a whole. Hunderwasser's buildings in Austria are an inspiring example of art giving back to the community.

Climatic design is based on typical or normal weather conditions.
Along with understanding of the importance of the differences between a building in the tropics and one situated in a temperate zone, it is also important to understand the variations that occur regionally. The shape, orientation, exposure and elevation must be investigated as they can have an effect on the temperature, wind, solar radiation and precipitation.

There is a continuous exchange of heat between a building and its outdoor environment. The factors affecting the transmission are convection (which depends on the rate of ventilation), radiation through the windows, evaporation and conduction (which may occur through the walls and roof inwards and outwards).

The amount of heat penetrating the building depends largely on the nature of the walls and roof. In the hot period of the day, heat flows through these elements into the building where some of it is stored and at night during the cool period, the flow is reversed.

When appropriate properties are chosen it is possible to achieve and maintain comfortable internal temperatures over a wide range of external conditions. The materials and type of construction to be used must be assessed in the following terms.

Absorptivity/emissivity:
This becomes especially important in hot climate areas. Radiation striking an opaque surface may be absorbed or reflected. The color of a surface gives a good indication of its absorptivity. The lighter the color, the more solar

radiation decreases and reflectivity increases (black absorbs, white reflects). Color does not indicate the behavior of a surface with regard to its emissive or power to omit long-wave radiation and both black and white painted surfaces lose heat to the sky at night at equal rates.

Porousness

With increased moisture content, materials show higher heat transmittance because of the relatively high thermal conductivity of water.

Insulation Value

As air is one of the best insulators, materials which enclose or contain air have low heat transfer characteristics and generally are light in weight. Insulation is most effective under steady state conditions or if the direction of heat flow is constant for long periods.

Walls roofs and building components are often made up of two or more layers separated by air spaces which provide a resistance to heat flow. The amount of this resistance depends not only on the width of the air space but also on the characteristics of the enclosing surfaces as heat transfer across these spaces takes place mainly by radiation from one surface to another. For this reason, highly reflective materials, such as metal foil, used in air spaces can reduce their thermal conductivity by over two or even threefold in some instances. Heat exchange by conduction and convection in the space depends on whether the space is horizontal or vertical, on its width and on the direction of the heat flow (upwards, downwards, or horizontal).

Thermal Capacity

Also called heat storage value. The larger this is, the slower the temperature change that is propagated through the material. This delay is called the 'time lag' of the construction and materials with large time lags are usually dense in quality and heavy in weight. Under constructions with large diurnal temperature variations

the significance of thermal capacity is much greater than insulation.

Solar radiation is especially present in glazing which transmits solar or short wave radiation very with very little loss in heat energy. As a result of this greenhouse effect, the heat which enters through glazed areas is trapped in the room and can increase the indoor temperature to far above that of the air outdoors. It is then understood that the indiscriminate use of glass in hot climate areas is not recommended. There is a wide range of heat absorbing and heat reflecting glasses but most are limited in their effectiveness.

The impact of solar radiation on buildings in hot

climates must be reduced not only by orientation and effective design of the structure but also by adequate shading. Although it is not always convenient or economical to shade roofs, walls lend themselves to this treatment in a number of ways which can be invaluable to eliminating or reducing one of the greatest sources of heat gain- the solar radiation entering through the windows. There are a variety of methods available and when selecting a shading device, each façade must be considered separately to achieve the most effective solar control.

Vegetation
Existing trees and shrubs provide the simplest way of protecting a low building from solar radiation. Deciduous trees are especially valuable as they do not cut out winter sunshine.

Horizontal Screens
These are the most effective against a high sun and are normally used on the north or south sides.

The nearer one is to the equator, the easier it is to screen these facades with a roof overhang such as those most often used in warm, wet regions. The overhangs are generally sufficient to protect the interior of the dwelling from slanting sun and driving rain, as well as to provide shade to over some portion of the surrounding area throughout the day. Balconies and projecting floor slabs are also common forms of horizontal screening,

Vertical Screens
In the form of closely spaced columns, vertical fins or rotating louvers are useful against the low sun on the east and west facades.

Recommendations for warm-humid climate zones:

Climate and summary of characteristics
High rainfall and high humidity are associated with a low diurnal range and a relatively high and even temperature throughout the year. Light winds and long periods of still air. Radiation intensity high; large proportion diffused so strong sky glare. Rain usually in afternoon often accompanied by violent electric storms.

Problems and Requirements
Uncomfortably hot, sticky conditions which require high air velocity past the body to increase efficiency of sweat evaporation throughout the year. The dominant characteristics required of buildings are openness and shading; they must be designed to provide continuous and efficient ventilation and protection from the sun, rain and insects. Structures may need to withstand hurricane velocity winds and in certain cases safe shelters may be necessary for the hurricane period. Termites can be a problem.

Response: General
Layout and Form: Buildings separated and scattered with free spaces between them to utilize air flow. Individual structures should be freely elongated; rooms preferably single banked with access from open air verandas or galleries. It may be advantageous to raise building s on stilts.
Orientation: north to south for habitable rooms but if buildings are in shade, variation possible to provide maximum airflow. Orientation to reduce solar radiation most important with high rise buildings.
Rooms: should ideally have openings on both the windward and leeward sides. Heat and moisture producing areas should be isolated and separately ventilated.
Outdoor Areas: as for buildings, they should be shaded; vegetation should not block free passage of air. Adequate storm water drainage should be provided.

Response: Structure
Windows and ventilation: openings should be large with inlets of similar size where wide spread of air is needed. Large sliding or folding walls and adjustable louvers commonly used. Screens, lattices, grills etc. are admit air flow and provide protection against glare. Flyscreens essential- they reduce airflow so best installed away from windows (around the veranda or balcony). Openings must be protected from radiation and glare, driving rain and noise.
Walls: have less thermal value than in any other zone. Lightweight construction of materials with low thermal capacity. If height of walls is kept down, it is easier to shade them and protect them from rain. Unshaded walls must be insulated and have a reflective out surface.
Roof: pitched to shed rain and with wide overhang for protection against glare. Lightweight, low thermal capacity, ventilated double roof preferable but insulated and with reflective upper surface. Space between roof and ceiling well proofed against insects rodents etc.
Surfaces: roof and exposed walls should be reflective (lightly colored). It is difficult however, to maintain lightly colored buildings in this climate because of high humidity and fungal growth.

fair trade

The most widely recognized definition of fair trade is "a trading partnership based on dialogue, transparency, and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of marginalized producers and workers. Fair trade organizations (backed by consumers) are engaged actively in supporting producers, awareness raising and in campaigning for changes in the rules and practice of conventional international trade. Fair trade's strategic intent is: 1) to deliberately work with marginalized producers and workers in order to help them move from one position of vulnerability to security and economic self-sufficiency. 2) to empower producers and workers as stakeholders in their own organizations and 3) to actively play a wider role in the global arena to achieve greater equity in international trade."

The first attempts to commercialize fair trade networks in the Western markets were initiated in the 1940s and 1950s by religious groups and various politically-oriented non-governmental organizations. The Mennonite Central Committee and the Church of the Brethren were the first to develop fair trade supply chains in Third World Countries. The products, almost exclusively handicrafts were mostly sold in World Shops. The goods themselves, ranging from jute goods to cross-stitch work, often had no other function than to indicate that a donation had been made. The fair trade movement as we know it today was shaped in Europe in the 1960s. Fair trade during that period was often seen as a political gesture against neo-imperialism. Liberal students protested against multinational corporations claiming that the traditional business models were fundamentally flawed. This was a direct attack against the global free market economy. The alternative was that price is directly linked to the actual production costs and where all producers are given fair and equal access to the markets. The slogan "Trade not Aid" gained international recognition when it was adopted by the United Nations Conference of Trade and Development.

The first Alternative Trade Organization (ATO) was developed in the Netherlands in the 1960s and was called S.O.S.Wereldhandel (S.O.S. meaning "Support Underdeveloped Regions" and wereldhandel meaning "world trade" in Dutch). It was organized as a non-profit importer of handicrafts from organized poor producers in the Southern Hemisphere.

In 1969 the first World Shop was created. It was operated by volunteers and was so successful that dozens of similar shops soon went into business in the Benelux countries, Germany and in other Western European countries.

"Crafts are the visible part of the iceberg of cultural diversity. The added value of craft products stems from the fact that they mirror the creativity, culture and heritage of craftspersons. It is UNESCO's intention to encourage innovation and training, promote the creation of small businesses and the presence of creative craftspersons in the global market and develop links between crafts and design."

_Global Alliance for Cultural Diversity
UNESCO

UN Educa

UNESCO:
nal, Scientific and Cultural Organization

UNESCO (United Nations Educational, Scientific and Cultural Organization) is a specialized agency of the United Nations established in 1945. Its stated purpose is to contribute to peace and security by promoting international collaboration through education, science, and culture in order to further universal respect for justice, the rule of law, and the human rights and fundamental freedoms proclaimed in the UN charter.

In total, 191 nations belong to UNESCO. The organization is based in Paris, with over 50 field offices and several institutes and offices throughout the world. Most of the field offices are "cluster" offices covering three or more countries; there are also national and regional offices. UNESCO pursues its action through five major programs: education, natural sciences, social and human sciences, culture, and communication and information. Projects sponsored by UNESCO include literacy, technical, and teacher-training programs; international science programs; the promotion of independent media and freedom of the press; regional and cultural history projects, the promotion of cultural diversity; international cooperation agreements to secure the world cultural and natural heritage and to preserve human rights; and attempts to bridge the world-wide digital divide.

Concerning art education, UNESCO states that promoting creativity and allowing it to flower in a spirit of freedom and intercultural dialogue is one of the best ways of maintaining cultural vitality. The role of creators in society too is very important and the Organization is strongly in favor of recognizing their legal and social status and of strengthening their networks around the world.

Artisanal products are those produced by artisans, either completely by hand, or with the help of hand tools or even mechanical means, as long as the direct manual contribution of the artisan remains the most substantial component of the finished product. These are produced without restriction in terms of quantity and using raw materials from sustainable resources. The special nature of artisanal products derives from their distinctive features, which can be utilitarian, aesthetic, artistic, creative, culturally attached, decorative, functional, traditional, religiously and socially symbolic and significant. (definition adopted by the UNESCO/ITC Symposium "Crafts and the international market: trade and customs codification" - Manila, 6-8 October 1997)

"Heritage is our legacy from the past, what we live today and what we pass on to future generations. Our cultural and natural heritage are both irreplaceable sources of life and inspiration." _UNESCO

As the only international organization with a global vision of the socio-cultural and economic role played by crafts in society, UNESCO has, for many years now, endeavored to develop well-balanced, coherent and concerted action in favor of this sector. The programs devoted to crafts facilitate training and promotional activities and stimulate the necessary cooperation between the relevant national bodies and regional, international and non-governmental organizations. The aim of the different actions undertaken by UNESCO is to prove to the concerned authorities that the artisanal sector deserves priority in national development plans.

UNESCO is specially involved in stimulating the creation of original models (UNESCO Crafts Prize 1990-2005), in the promotion of quality handicrafts and in the commercialization of artisanal products on the international market. In this view, a series of activities are carried out for artisans' training (through further training workshops) and for the promotion of craft products outside of their place of origin (in exhibitions held at UNESCO Headquarters or on the occasion of international fairs).

Moreover, UNESCO encourages regional and international cooperation by supporting the organization of meetings of experts. The aim is to improve the life and working conditions of the artisan, to protect craft creation and to harmonize data collection on crafts. The books, studies and reports published by UNESCO on this subject are widely disseminated.

UNESCO has organized an International Symposium-Workshop on natural dyes which took place in Hyderabad (India) from 5 to 12 November 2006. It will bring together master craftpersons, researchers and specialists in natural dyes and craft promoters from the five continents. The aim of this encounter is to attain practical outcomes based on the diversity of experiences and respectful of the variety of natural, social and cultural environment of the concerned craftspeople.

In the framework of design, with the aim of stimulating and recognizing the creativity of young designers worldwide, UNESCO organizes two competitions: Design 21 and FabDesign.
The UNESCO Program for Crafts and Design also hosts the Tribute 21 project which is meant to create "Dream Centers" for artistic activities in favor of children in countries in post-conflict situation.

A fund to help the States of sub-Saharan Africa improve the preservation of their cultural and natural heritage will be launched in South Africa on 5 May. The African World Heritage Fund will also be used to help boost the number of African sites on UNESCO's World Heritage List. Sub-Saharan Africa is severely under-represented on the List. Despite great cultural and natural diversity, only 65 of the 812 World Heritage sites are to be found in this region. They constitute 43 percent of sites on the List of World Heritage in Danger.

Under the Fund, grants will be awarded to help African States Parties to the UNESCO World Heritage Convention* prepare national inventories of their heritage sites and prepare nomination dossiers for inscription onto the World Heritage List. Help will also be extended to train personnel to carry out these tasks.

Conservation and management of heritage properties in general, including those already inscribed on the World Heritage List, will also be eligible for funding. Such will also be the case with rehabilitation assistance for properties on the List of World Heritage in Danger.

South Africa has donated 20 million rend (US$3.5million) to help launch the Fund, while India and Israel have also pledged contributions. The private sector is also being encouraged to contribute and is expected to become a key partner in the future.

Created as a Trust under South African law, the Fund will be managed and housed for at least two years by the Development Bank of Southern Africa, which has thus far handled the feasibility study and the registration of the Fund free of charge. It will be run by a Board of Trustees, including two for each of the African Union's five regions and three additional members with permanent observer status. UNESCO and the African Union will have one observer each on the Board. All trustees will be experts in heritage preservation. Their unpaid appointment will be for a three-year term of office, renewable once. The first grants from the Fund will be made in 2007. Grant applications will be reviewed yearly.

*Forty sub-Saharan African States have ratified the World Heritage Convention. Only 24 have sites on the World Heritage List of which 32 are natural sites, 31 are cultural and 2 are mixed.

In today's world, the economic, political as well as cultural stakes for knowledge are tremendous. To facilitate the emergence of knowledge societies in this context, UNESCO must endeavor to define general lines of inquiry that encompass a variety of approaches and emphasize the sharing of achieved results so as to create humane and sustainable development for all.

UNESCO Events:
A brief description of conferences, workshops and meetings organized by UNESCO and its partners in the field of communication and information.

_ICTs for intercultural dialogue: Developing communication capacities of indigenous peoples (ICT4ID)
The objective of the workshop is to share lessons learned from the first phase of the project (2004-2005), which led to content production with eleven different indigenous communities from around the world, and to conceptualize and plan the training and production component foreseen in the second phase (2006-2007).

Furthermore the workshop intends to reinforce the theoretical knowledge and capacity of participants regarding the issue of indigenous identity and self-expression in the light of the UNESCO Declaration on Cultural Diversity (2001) and the related Conventions on Safeguarding the World's Intangible Heritage (2003) and the Convention on the Protection and Promotion of the Diversity of Cultural Expressions (2005).

Workshop participants will include representatives of five indigenous communities - the Dolgan of Siberia, the Ayllus and Markas from Bolivia, the Massai from Kenya and the Matsiguengas from Peru – producers and film-makers working with these communities, international resource persons with experience in training and film-making with indigenous peoples and/or anthropological competence. The workshop will be co-facilitated by Program Specialists from both UNESCO Sectors involved in this project: Ms Rosa M. Gonzalez, team leader from the Communication Sector and Ms Susanne Schnuttgen, deputy team-leader from the Culture Sector.

Participants will be asked to actively participate in the different sessions and to bring an updated version of their project, that is a developed script, budget, technique, production criteria, timetable, etc.., as well as all visual material available (pictures, storyboard, rushes or other visual elements that they deem important and interesting in explaining the nature and production of their project). They have also been asked to bring a reference or model of a film, video or production (1 or 2 maximum) that they find close to what you have in mind for their own production -content, style, shape or form.

_UNESCO and the World Summit on the Information Society (WSIS)
The World Summit on the Information Society (WSIS) was held in two phases. The first phase took place in Geneva hosted by the Government of Switzerland from 10 to 12 December 2003, and the second phase took place in Tunis hosted by the

Government of Tunisia, from 16 to 18 November 2005. The Summit adopted the following documents:

- Geneva Declaration of Principles
- Geneva Plan of Action
- Tunis Commitment
- Tunis Agenda for the Information Society

UNESCO with its unique mandate to promote the free exchange of ideas and knowledge has played a key role in WSIS. UNESCO's contribution incorporated the ethical, legal and socio-cultural dimensions of the Information Society and helped to grasp the opportunities offered by the ICTs by placing the individual at its center.

_First UNESCO World Report: "Towards Knowledge Societies"

The rise of "knowledge societies" is the subject of the UNESCO World Report to be launched by Director-General Koïchiro Matsuura at a press conference at Organization Headquarters on November 3

The Report will be launched in the presence of Boutros Boutros-Ghali, former Secretary-General of the United Nations and former Secretary-General of the Organization Internationale de la Francophonie. The work is the first in a new series of UNESCO reports, to be published every two years, focusing on subjects at the heart of the Organization's mission such as cultural diversity and sustainable development.

Towards Knowledge Societies clearly makes the distinction between knowledge societies and the information society. While the information society is based on technological breakthroughs, knowledge societies "encompass broader social, ethical and political dimensions." The report focuses in particular on the foundations on which knowledge societies that will optimize sustainable human development are constructed.

The Report analyses the increasingly important role played by knowledge in economic growth and advances that it can serve as a new springboard for development in the countries of the South. It also presents a detailed analysis of the factors blocking the access of many countries to the opportunities offered by information and communication technologies, especially the growing digital divide and restrictions on freedom of expression. Finally, the report makes a series of recommendations to improve the situation.

The Report comes two weeks ahead of the second phase of the World Summit on Information Societies, which was held in Tunis from November 16 to 18.

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